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Faculty Profiles

VOLUME B





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Marilyne Andersen

Full Professor Laboratory of Integrated Performance in Design (LIPID)

lipid.epfl.ch

PhD Building Physics (2004, EPFL)

MSc Physics (1998, EPFL)

Keywords

daylighting, design support, building performance, visual and thermal comfort, perception, light and health, circadian photoreception

Career trajectory

2018 to date	Academic Director of smart living lab.
2018 to date	Co-Founder, Managing Director, wOCULIGHT dynamics.
2017-2018	Head of Building2050 group, smart living lab.
2013-2018	Dean of ENAC School, EPFL.
2013 to date	Full Professor, EPFL.
2010-2013	Associate Professor, EPFL.
2009-2010	Associate Professor tenure-track, MIT.
2009	Visiting faculty, LBNL/UC Berkeley.
2004-2009	Assistant Professor tenure-track, MIT.
2001-2002	Visiting scholar, LBNL/UC Berkeley.
1998-2004	Teaching and Research Assistant, EPFL.

Research mission & relevance

The Laboratory of Integrated Performance in Design (LIPID) engages in questions of energy, health, comfort and perception and their interactions in the design of the built environment, with an overall strategic goal of fulfilling building occupant needs and a core focus area on daylighting strategies. Our work involves different perspectives and methods, ranging from the human scale to the building and urban scale, based on both simulations and experimental work. LIPID aims to bring new models, methods, metrics, decision support platforms and physical demonstrators, to enrich the designer's toolset and adopt a holistic and integrated approach in architecture.

Honors, memberships, scientific community services

2018 to date	Expert, InnoSuisse Swiss Innovation Agency.
2018	Strategic Research Review, Cambridge University.
2018	Chair, Jury for the Daylight Award for Design&Research.
2017	Project leader for winning project at U.S. Solar Decathlon.
2016 to date	Board member, Fondation Culture du Bâti CUB.
2016 to date	Founding member, Daylight Academy.
2016	First laureate of Daylight Award for Research.
2015 to date	Board member and member of Academic Committee LafargeHolcim Foundation for Sustainable Construction.
2013 to date	Associate Editor, LEUKOS (Journal of the IES).
2012 to date	Editorial Board member, Building & Environment (Elsevier).
2008-2010	Mitsui Career Development Professor, MIT
2009	IES Taylor Technical Talent Award.



Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?hl=fr&user=marilyne.andersen) (Mar 2019) h = 30,
2609 citations

54 peer-reviewed journal papers
(33 since 2011) and 8 invited papers

136 conference papers of which 91 fully
peer-reviewed (102 since 2011 of which
76 fully peer-reviewed)

4 books (of which 2 edited and
1 published in-house) and 4 book
chapters.

Most important grants since 2011

Dynamic visual comfort metric:
integrating dynamics of gaze pattern
models and visual system behavior
(Swiss NSF - Engineering, 2015-18,
CHF 348'753, role: PI).

A dynamic computational model to
evaluate non-visual effects of light on
human health in buildings (Swiss NSF -
Interdisciplinary, 2015-18, CHF 248'577,
role PI).

Measuring the Perceptual Dynamics of
Daylight in Architecture (VELUX Stiftung,
2014-18, CHF 305'000, role PI).

Innovation, technology transfer & impact on society

OCULIGHT dynamics Sàrl: startup
founded in 2018 (inc. software license
agreement with EPFL).

Software for simulation and planning
of photovoltaic systems in urban
environments (patent application
pending with EPFL). Suite of freely
available tools for decision support
pertaining to: solar potential in urban
settings (UrbanSOLve, with EPFL),
non-visual lighting (speKtro, with EPFL),
daylight performance (LightSolve, with
MIT and EPFL), façade technologies
(D-LITE, with MIT).

US Patent No. US20130321923A1: "A
Passive Louver-Based Daylighting
System" (2013, with MIT).

Main cooperative work / collaborative projects

Collaboration (inc. SNF grant, PhD co-advising) with Harvard Medical School (S. Lockley, Brigham & Women Hospital), USA (2006-now) and with University of Oxford (M. Spitschan, Medical Science Division), UK (2018-now) on bridging chronobiology / circadian photoreception and healthy (day)lighting in the built environment

Collaboration on perceptual aspects of daylight with NTNU (B. Matusiak, joint VELUX grant 2016-now), Norway and UniL (JP de Matos Rodrigues, E. Dan-Glauser, joint publication), Switzerland for emotional effects, and with DTU (B. Olesen, PhD visit, 2016-now), Denmark for visual-thermal interactions

CCEM-funded project SECURE (Synergistic Energy and Comfort through Urban Resource Effectiveness, 2015-2017) with ETHZ (J. Carmeliet, D-BAUG) and EMPA (V. Dorer, LBST), Switzerland: analysis framework and associated tools for the holistic assessment and optimisation of urban energy, comfort and utility.

Key publications since 2011

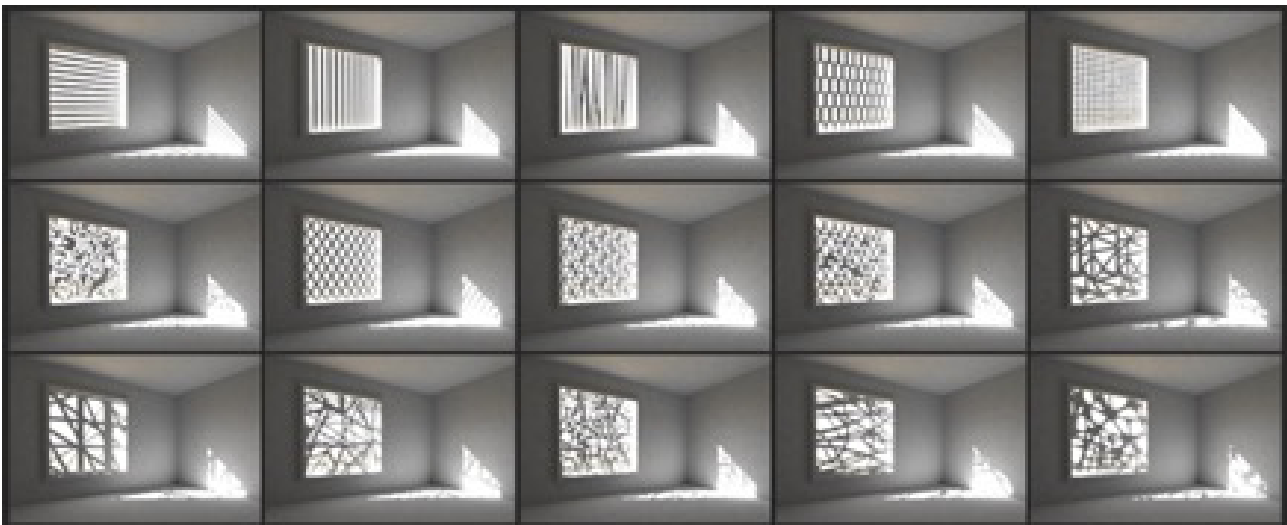
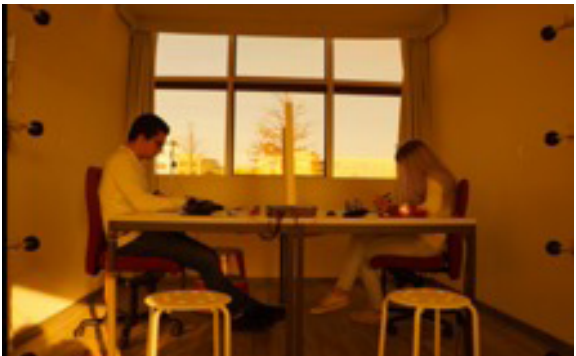
Chamilothori, K., Chinazzo, G., de Matos Rodrigues, J.P., Dan-Glauser, E., Wienold, J., and Andersen, M. (2019) 'Subjective and physiological responses to façade and sunlight pattern geometry in virtual reality', *Building and Environment* 150, pp. 144-155. doi: [10.1016/j.buildenv.2019.01.009](https://doi.org/10.1016/j.buildenv.2019.01.009)

Ámundadóttir, M.L., Rockcastle, S., Khanie, M.S., and Andersen, M. (2017) 'A human-centric approach to assess daylight in buildings for non-visual health potential, visual interest and gaze behavior', *Building and Environment* 113, pp. 5-21. doi: [10.1016/j.buildenv.2016.09.033](https://doi.org/10.1016/j.buildenv.2016.09.033)

Ámundadóttir, M.L., Lockley, S.W., and Andersen, M. (2017) 'Unified framework to evaluate non-visual spectral effectiveness of light for human health', *Lighting Research and Technology* 49(6):673-696. doi: [10.1177/1477153516655844](https://doi.org/10.1177/1477153516655844)

Andersen, M. (2015) 'Unweaving the human response in daylighting design', *Building and Environment* 91, pp. 101-117. doi: [10.1016/j.buildenv.2015.03.014](https://doi.org/10.1016/j.buildenv.2015.03.014)

Andersen, M., Mardaljevic, J., and Lockley, S.W. (2012) 'A framework for predicting the non-visual effects of daylight-Part I: photobiology-based model', *Lighting Research and Technology* 44(1), pp. 37-53. doi: [10.1177/1477153511435961](https://doi.org/10.1177/1477153511435961)



Marco Bakker

Associate Professor Laboratory for Spatial Manufacturing (MANSLAB)

manslab.epfl.ch

Diploma (1983–1988, TU Delft (NL), Dep. of Architecture / Urbanism)

Diploma (1985–1986, EPF Lausanne dep. Architecture)

Diploma HTS (1979–1983, Leeuwarden (NL), Dep. of Construction)

Keywords

darwinism, craftsmanship, concrete cross-overs, build the built, schizophrenia, emotional sustainability, archaic energy, architectural storytelling, water architecture

Career trajectory

2013 to date	Associate professor ENAC EPFL MANSLAB Practical.
2009-2013	Guest professor ENAC EPFL.
2008 to date	BABL Lausanne & Zurich.
2008-2013	Professor Joint Master of Arch., Bern, Fribourg, Geneva.
2003 to date	BABL in Lausanne.
2003–2008	Lecturer in Design Theory, Berner Fachhochschule.
2002–2003	EPFL Assistant to prof. Kaschka Knapkiewicz.
1996–2000	EPFL Assistant to prof. Vincent Mangeat.
1992–2003	Bakker & Blanc in Fribourg and Biel.
1989–1992	Camera Obscura coll. with ethnologist Dr. H.P. von Arburg.

Research mission & relevance

In our eyes the profession of an architect should tend to a craftsmanship where creativity and the persistent practice of the discipline will lead at the end to virtuosity. Beside a 'plurality of time', we are interested in a 'plurality of space'. It's not necessarily the transparency, but more the disposition face to face or side by side of different worlds which provokes an impression of density and a relational richness.

For a sustainable manufacturing we think that, beside fundamental knowledge, we should cultivate a spirit which across endless tenacious experiments and the lessons learned by the occurring failures, we can develop a tacit knowledge, capable of finding new forms of expression.

Honors, memberships, scientific community services

2014–2018	Chairman of the Venice Biennale Jury Swiss Pavilion.
2013–2017	Member admission committee BSA, section Zurich.
2001–2003	Member of the central committee FAS BSA.
2001–2006	Member of the Commission of Art & Arch. Canton Bern.
2002–2007	Member of the editorial board: werk, bauen + wohnen
2000 to date	Jury participations in numerous international architectural and urban competitions.
1992 to date	member SIA.
2000 to date	member FAS BSA.



Most important grants since 2011

2015, *A Sustainable Future for Gletsch (VS)*, Manslab Study.

Kanton Wallis, Furka/Oberalpbahn & Gemeinde Gletsch.

Innovation, technology transfer & impact on society

BABL MANSLAB New forms of concrete prefabrication (combined with natural stone / oversized elements / transparent concrete.

The sustainable power of sensual archaic energy plants.

Urban reuse of fluvial threaded territories and wetlands.

Main cooperative work / collaborative projects

2017, Bachelor studio, *Wind Craft Work. A wind power plant on the Tour de Gourze. Experiments in the EPFL Windtunnel*, Manslab with WIRE, prof. Fernando Porté-Agel.

2016, Master, *The Behaviour of Clients in Architecture*, 'Qui paye commande', Magma & Principes, Manslab with Université de Lausanne, prof. Dave Lüthi.

2014, Research, *Spatial Atmospheric Quality and Tourism. Example Binntal*, Bakker & Blanc EPFL with Berner Fachhochschule, HEPIA, prof. Laurent Daune.

Key publications since 2011

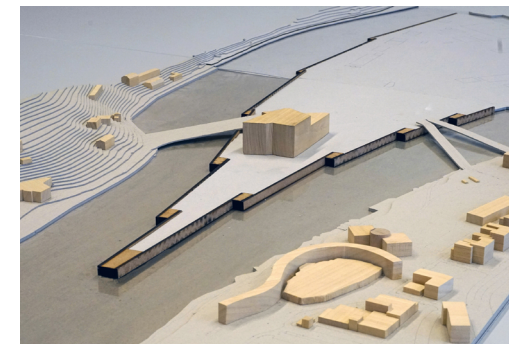
Bakker, M. and Blanc, A. (2019) *Darwin's Theatre. evolution in architectural design*, Zurich: Park Books.

Bakker, M. and Blanc, A. (eds) (2019 forthcoming) *Architectura procidens. The fall in architecture*. Lausanne: Manslab [coll. Magma & Principes].

Bakker, M. and Blanc, A. (eds) (2018) *In flagranti. The significant moment*. Lausanne: Manslab [coll. Magma & Principes].

Bakker, M. and Blanc, A. (eds) (2017) *Corpora delicti. The significant detail*. Lausanne: Manslab [coll. Magma & Principes].

Bakker, M. and Blanc, A. (eds) (2016) *Architectura ludens. the element of play in architecture*. Lausanne: Manslab [coll. Magma & Principes].



Alexandre Blanc

Associate Professor
Laboratory for Spatial Manufacturing (MANSLAB)

manslab.epfl.ch

Diploma (1984-1990, EPF Lausanne dept. Architecture)

Keywords

darwinism, craftsmanship, concrete cross-overs, build the built, schizophrenia, emotional sustainability, archaic energy, architectural storytelling, water architecture

Career trajectory

2013 to date	Associate professor ENAC EPFL MANSLAB practical.
2009-2013	Guest professor ENAC EPFL.
2008 to date	BABL Lausanne & Zurich.
2001-2004	EPFL Assistant to prof. Martin Steinmann.
2001 to date	BABL in Lausanne.
1992-2001	Bakker & Blanc in Fribourg and Biel.
1989-1992	Junior architect Diener & Diener in Basel.

Research mission & relevance

In our eyes the profession of an architect should tend to a craftsmanship where creativity and the persistent practice of the discipline will lead at the end to virtuosity. Beside a 'plurality of time', we are interested in a 'plurality of space'. It's not necessarily the transparency, but more the disposition face to face or side by side of different worlds which provokes an impression of density and a relational richness.

For a sustainable manufacturing we think that, beside fundamental knowledge, we should cultivate a spirit which across endless tenacious experiments and the lessons learned by the occurring failures, we can develop a tacit knowledge, capable of finding new forms of expression.

Honors, memberships, scientific community services

2012-2015	Chairman of the FAS BSA, Romande.
2007-2009	President DRA, Distinction Romandie d'Architecture.
2001-2003	Member of the central committee FAS BSA.
2000 to date	Jury participations in numerous international architectural and urban competitions.
2000 to date	member FAS BSA.
1992 to date	member SIA.



Most important grants since 2011

2015, *A Sustainable Future for Gletsch (VS)*, Manslab Study.

Kanton Wallis, Furka/Oberalpbahn & Gemeinde Gletsch.

Innovation, technology transfer & impact on society

BABL MANSLAB New forms of concrete prefabrication (combined with natural stone / oversized elements / transparent concrete.

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2016, Master, *The Behaviour of Clients in Architecture*, 'Qui paye commande', Magma & Principes, Manslab with Université de Lausanne, prof. Dave Lüthi.

2014, Research, *Spatial Atmospheric Quality and Tourism. Example Binntal*, Bakker & Blanc EPFL with Berner Fachhochschule, HEPIA, prof. Laurent Daune.

Key publications since 2011

Bakker, M. and Blanc, A. (2019) *Darwin's Theatre. evolution in architectural design*, Zurich: Park Books.

Bakker, M. and Blanc, A. (eds) (2019 forthcoming) *Architectura procidens. The fall in architecture*. Lausanne: Manslab [coll. Magma & Principes].

Bakker, M. and Blanc, A. (eds) (2018) *In flagranti. The significant moment*. Lausanne: Manslab [coll. Magma & Principes].

Bakker, M. and Blanc, A. (eds) (2017) *Corpora delicti. The significant detail*. Lausanne: Manslab [coll. Magma & Principes].

Bakker, M. and Blanc, A. (eds) (2016) *Architectura ludens. the element of play in architecture*. Lausanne: Manslab [coll. Magma & Principes].



Nicola Braghieri

Associate Professor
Laboratoire des Arts pour les Sciences (LAPIS)

lapis.epfl.ch

PhD in Theory of Architecture (1998, University of Genova, Italy)
Diploma in Architecture (1994, Polytechnic School of Milano, Italy)



Keywords

operative critic of art, history of ideal visions and utopian depictions, architectural model and drawing, principles and methods of survey, visualization and 2d-3d vector modeling, virtual representation on computer graphics, post-production techniques, research through computer-generated virtual realities

Career trajectory

2015-to date	Director of EPFL Architecture Section.
2013-to date	Associate professor at EPFL.
2013	Full Professor qualification of Italian Ministry of University and Research.
2010-2011	Professor i.V. at TU of Darmstadt.
2001-2010	Teaching and Research Professor at University of Genova.
2007-2008	Visiting Professor at EPFL.
2003-2005	Visiting Professor at ETH-Zürich.
2005-2006	Visiting Professor at SSEAU of Napoli.
2000-2002	Lecturer at Polytechnic of Milano.
1999-2000	Lecturer at University of Genova.

Research mission & relevance

The laboratory investigates the processes of representing scientific thought by way of figurative tools offered by the artistic disciplines. In the fields of architecture and engineering, the expressive arts are integral to the development and execution of each project, from the moment when ideas and concepts take shape to when forms eventually find a framework stable enough to outlast the transitory condition of their construction. LAPIS will have the specific mission of operating in a field that straddles art and science. It will provide an emotional approach to disciplines that are founded on the search for certainties and objective reasoning. Indeed, the founding principle of representation is the condition of absolute subjectivity in which the object represented is established in relation to whoever carries out the act of representation.

Key publications since 2011

- Braghieri, N. (2018) *Analogous Postcards, 228 pages in 5 volumes of real falsification*, Berlin-Roma: Divisare.
- Braghieri, N. and Giromini, P. (2017) *Raccards, greniers et granges-écuries, réflexions sur le bâti rural valaisan*, Lausanne: Reprolapis.
- Braghieri, N. and Shaerer, P. (2015) *Objets trouvés, The Beauty of Everyday Objects*, Lausanne: Reprolapis.
- Braghieri, N. (2014) 'L'architecture, une utopie concrète', in Ventura, E. (ed), *Architecture utopique, imaginaire ou visionnaire?* Lausanne: Favre.
- Braghieri, N. (2013) *Architettura, arte retorica*, Genova: Sagep.

Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?user=...) (Jan 2019)

134 edited publications (Jan 1998 - Jan 2019)

97 edited publications, 2 in print since 2011

66 edited peer-reviewed journal articles

6 edited professional press articles

2 research monographs

7 edited books

8 teaching books

25 edited book chapters

27 edited conference papers, posters and talks fully peer-reviewed

Innovation, technology transfer & impact on society

Physically Based Rendering and Computer-Generated Virtual Realities.

Principles and Methods of Survey in Rural Alpine Areas.

Operative Tools for Ancient Masters Painting Analysis.

Honors, memberships, scientific community services

Visiting professorship, critic and lecturer in several European universities.

Permanent member of the Genova Doctoral School Committee.

2019 to date Member of the Architekturrat der Schweiz.

2008 to date Editorial Board member of Casabella.

2018 to date Editorial Board member of ArchAlp.

1994-2000 Editorial Board of RP Network.

1990-2018 Member of OdG Italian Association of Journalists.

1994-2018 Member of OdA - Italian Association of Architects.

1998 to date Jury member in numerous international architectural and urban competitions.

1998-2015 Winner or finalist in several architectural design international competitions.

Main cooperative work / collaborative projects

2016 to date: *Distribution of Light and Shadow on Facades*, research project with Antoine Picon, Harvard GSA.

La Chaux-de-Fonds, métropole horlogère, founded research project with Filippo De Pieri, Polytechnic School of Torino (2017 to date).

2018 to date: *Shadow of Switzerland, invisible images of colonialism*, collaborative project with Doreen Mende, HEAD Genève.

Most important grants since 2011

2019: Jana Kostantinova (investigator), Nicola Braghieri (director), *Relationship between Art and Architecture in (post) Socialist Countries*, Fondation Gandur pour l'Art, 25.000 chf (2017)+ USM Möbelsystem Foundation, 40.000c hf (2017-2018) + Fondation Alcea, 50,000 chf.

2016-2018: Nicola Braghieri and Patrick Giromini, *Relevé du bâti vernaculaire dans le Canton Valais*, Canton Valais, logistic financing 150.000 chf

2016-2019: Laura Trazic (investigator), Nicola Braghieri (director) and Antoine Picon (co-director): *Relief et/ou planéité*, Bourse d'Excellence de la Confédération Suisse 75.000 chf.

2016 Boris Hamzeian (investigator), Nicola Braghieri (director): *The depiction of Utopia*, Bourse d'Excellence de la Confédération Suisse, 25.000 chf.

2017-2018: Filippo de Pieri (director of research), Nicola Braghieri (co-director), Florence Grazier Bideaux, Yves Pedrazzini: *La Chaux-de-Fonds, métropole horlogère*, founded research project with Polytechnic School of Torino, Fondazione Sanpaolo, 50.000 chf.



Bernard Cache

Associate Professor Digital Cultures for Architectural Project (CNPA)

cnpa.epfl.ch

PhD Thesis in Architecture on *Vitruvius' De Architectura: Fortuito supra acanthi radicem* (2009, University Pierre Mendès France, Grenoble)
Diploma (1985, ESSEC_Ecole Supérieure des Sciences, Economiques et Commerciales)
Diploma in Philosophy (1983, Institut Polytechnique de Philosophie de Paris VIII, under Gilles Deleuze's supervision)
Diploma in Architecture (1983, EPFL)

Keywords

Bernard Cache developed the concept of non standard architecture in his book *Earth Moves* published by MIT Press in 1995. This concept was given the name OBJECTILE by Gilles Deleuze in his book on Leibniz: *The fold*.

Career trajectory

In 1996, Bernard Cache founded the company Objectile together with his partner Patrick Beaucé in order to conceive and manufacture non-standard architecture components. He is currently dedicated to the reading of classical texts (such as Vitruvius' *De Architectura*, or Dürer's *Underweysung der Messung*) with the help of CAD CAM software. After teaching nomadically in many universities, he is now Professor at the EPFL where he set up the Laboratory: Digital Culture for Architectural Projects.

Research mission & relevance

1. Transpose the CAD-CAM digital methods already in use in the mechanical industry towards the building industry while it is currently moving to BIM.
On the one hand, our laboratory keeps on progressing at the forefront of associative manufacturing methodology together with Missler software. On the hand, we collaborate with the major forerunners BIM actors in French speaking Switzerland, such as Geneva state who already developed one of the best GIS platform.
2. Inscribe this transposition within the history of architectural culture.
After researches conducted on the parametric methodology in Vitruvius' *De Architectura* & in Albrecht Dürer's *Underweysung der Messung*, our lab has started new investigations on:
The deformation of the Muqarnas in the Alhambra of Granada
Desargues projective geometry applied to perspective, gnomonics and stereotomy.

Honors, memberships, scientific community services

Member of the CAS in BIM Coordination Steering Committee of the HEIA in Fribourg.



Most important grants since 2011

Roadmap to BIM for the Civil Engineering Infrastructure. (Geneva State)

Roadmap to BIM for the Geneva State.
Interoperability Platform between BIM and BEM (Building Energy Modeling)
= InnoSwiss contract

Innovation, technology transfer & impact on society

POC for the automatization of the building permit delivery in the Geneva State.

Main cooperative work / collaborative projects

CNPA-Tuto = Open BIM E-learning Platform with RessLab at the EPFL.

OBEP = Open BIM E-learning Platform with other Educative Institutions in French Speaking Switzerland.

Key publications since 2011

Cache, B. (2019) *L'encyclopédie vitruvienne aujourd'hui?* Lausanne: PPUR [Collection: Poche Architecture].

Cache, B. (2016) *Toujours l'informe: Géométrie d'Albrecht Dürer*. Lausanne: PPUR.

Cache, B. (2011) *Projectiles*. London: AA Publications [Architecture words, 6].



Jérôme Chenal

Senior Scientist (MER) Urban and Regional Planning Community (CEAT)

ceat.epfl.ch

PHD ès Sciences (2008, EPFL, Switzerland)

Master in Architecture (1999, EPFL, Switzerland)

Keywords

urban planning, regional planning, public spaces, urbanisme, urban management, africa, switzerland, african cities, making of the city

Career trajectory

2018 to date	Affiliate Professor at UM6P.
2016 to date	Senior Scientist.
2014 to date	Director of the CEAT.
2012-2013	Scientific collaborator.
2010-2012	Post-doc Fellow, UCL.
2004-2008	Research Assistant, EPFL.

Research mission & relevance

Our expertise is related to territories on scales ranging from land use planning to urban planning and design. The research unit is particularly active in understanding the processes of creating landforms with a particular focus for mixed methods that use large databases and anthropological understanding of phenomena. The themes of health, density, peripheries, public space and mobility are treated in their impacts on the territories.

Honors, memberships, scientific community services

2018 to date	Affiliate professor at the School of architecture, planning and design, University Mohammed VI Polytechnic (UM6P).
2018 to date	Journal manager of <i>African Cities</i> journal.
2018 to date	Member of the editorial committee of <i>Journal of Architectural Research and Development</i> (JARD).
2017 to date	Member of the editorial committee of Journal <i>Hermes</i> (CNRS).
2017 to date	Director of Certificate of Open Studies (COS), Management and planning of African cities
2017 to date	Co-director of MAS (Master of Advanced Studies) in urban planning and design.
2017 to date	Co-director of CAS (Certificate of Advanced Studies) urban planning, EPFL and University of Geneva (UNIGE), with Géraldine Pflieger.
2017 to date	Co-director of CAS (Certificate of Advanced Studies) <i>Urbanisme opérationnel et opérateurs urbains</i> [operational urbanism and urban operators], EPFL and UNIGE, with Laurent Matthey.
2017 to date	Member of the scientific committee of <i>espacetemps.net</i> .



Bibliometric indicators

Journal Articles: 33

Book chapters: 28

Report: 20

Conference papers: 23

Books: 9

Most important grants since 2011

PostcarWorld: a trans-disciplinary multi-dimensional simulation. SNF.

African Contribution to Global Health, Sinergia, SNF.

Sustainable, Resilient and Smart African Cities, OCP Foundation.

Innovation, technology transfer & impact on society

2018: Establishing of a catalog/ database of the architectural elements of the former agricultural research building complex in St. Aubin, that could be dismantled and reused for the construction of a new building.

Main cooperative work / collaborative projects

PostcarWorld: a trans-disciplinary multi-dimensional simulation. Project partners are EPFL (Choros, Lasur, CEAT,LCC), ETHZ (IVT), Uni. Svizzera Italiana (IRE)

African Contribution to Global Health. Project partners are EPFL (CEAT), Swiss TPH and University of Basel

Plateforme Territoire et Villes d'Afrique Subsaharienne. Project Partners are EPFL (CEAT), AUF (Agence Universitaire Francophone), ULB (Belgium), EAMAU (Togo), UM6P (Morocco), ENAU (Tunisie), Université de Liege (Belgium), University of Kinshasa (RDC)

Key publications since 2011

Jaligot, R., Chenal, J., Bosch, M., and Hasler, S (2019) 'Historical dynamics of ecosystem services and land management policies in Switzerland', *Ecological Indicators*, 101, pp. 81-90.

Jaligot, R. and Chenal, J. (2018) 'Cultural ecosystem services provision in response to urbanization in Cameroon', *Land Use Policy*, 79, pp. 641-649.

Hasler, S., Chenal, J., and Soutter, M. (2017) 'Digital Tools as a Means to Foster Inclusive, Data-informed Urban Planning', *Civil Engineering and Architecture*.

Chenal, J. (2014) *The West African City. Urban Space and Models of Urban Planning*. Lausanne: EPFL Press.

Chenal, J., Pedrazzini, Y., and Bolay J.-C. (2016) 'From the Field to the Theory', in *Learning from the Slums for the Development of Emerging Cities*, Berlin: Springer International Publishing, pp. 229-237.



Elena Cogato Lanza



Senior Scientist (MER) Laboratory of Urbanism (LAB-U)

lab-u.epfl.ch
Diploma in Architecture (1990, University of Venice, Italie)
PhD ès Sciences (1999, EPFL, Suisse)

Keywords

history and theory of urbanism, mapping, nature and city, urban difference, comparison, palimpsest, metropolitan agriculture, renaturation

Career trajectory

2018	Lecturer at Faculty of Geosciences and Environment, UNIL.
2007 to date	Senior Scientist EPFL.
2000-2007	Research associate and Lecturer at the EPFL.
2006	Lecturer at the Institute of Geography, UNINE.
2001-2009	Associate foreign scientist at LOUEST (UMR CNRS 2410)
1993-2005	Research associate at the Fondation Brillard Architectes.
1991-1992	Swiss Confederation – European Council Fellowship UNIGE

Research mission & relevance

In the frame of Lab-U strategy, my main research questions are: How can we deal, as scientific researcher and as urban designer, with the decline of the functional city? How can we define the new concept basis and design patterns for manipulating both the theoretical and the material legacy of the XXth century? My topics had been the rational city; the category of Neighbourhood and the value of Proximity; the car-city decline and the consequent re-structuring of urbanization patterns; revitalization and renaturation; food self-sufficiency and planning. Since 2017 I have been working on the relation between agricultural and urban surfaces and the need for a renewed eco-system approach towards a food security urbanism (Metropolitan Agriculture and Ecological Habitats). About methodology, I make continuous experiments in interdisciplinarity and in new visual tools of representation (crossing mapping, cartographic analysis, statistical data, landscape photography and drawing) to bring together various fields of knowledge and expertise in unusual relationships.

Bibliometric indicators

28 Journal Articles
7 Research Monographs
11 Edited Books
36 Book Chapters
49 Conferences
54 Sole authorship
19 items published since 2011
3 Publications on students' work

Most important grants since 2011

> Urbanism of Dissensus. A comparative study of interplay between urban form and political processes in Guadalajara, Mexico, SEFRI-SERI, Grant 7573, Euro 23'040
> Post-car world. A trans-disciplinary multi-dimensional Simulation, SNF Sinergia, Grant 4091, CHF 1'800'000 (2013-2017)
> Territory in the Crisis, Compagnia di San Paolo, Grant 7553, Euro 61'680 (2013-15).

Innovation, technology transfer & impact on society

Launch of the International Consultation: Prospective Visions for Greater Geneva: Inhabiting the City-Landscape of the 21st Century (As President of the Steering Committee of the international Greater Geneva)

Honors, memberships, scientific community services

2015 to date President of the Board of the Brillard Architectes Foundation.
2014-2015 Member of the jury of Prix Victor and Hélène Barbour, University of Geneva.
2011 to date Member of the international scientific committee of the Grand Prix de l'Urbanisme (France).
2008 to date Associate Publisher of the publishing house Metispresses in Geneva and Director of the series *vuesDensemble*.
2008-2009 Member of the Scientific Committee for the international research-development program *Grand Pari de l'Agglomération Parisienne*, French Ministry of Culture and Communication.
2017 to date Member of International Editorial Boards: Cahiers de la recherche architecturale, urbaine et paysagère (since 2017); the series Landscripts, ETHZ-Jovis Publisher, Berlin (since 2012); Les Carnets du Paysage, ENSAP Versailles et Marseille (since 2010).
Scientific expert/reviewer National Research Agencies: ANVUR Italy, 2016; FWO Belgium, since 2015; ANR France 2011; French Ministry of Culture and Communication (DAPA-BRAUP 2004-2009).

Main cooperative work / collaborative projects

City & Production Lab, International Platform: Uni Milano Bicocca; Uni Bologna, Polytechnique Milan; Polytechnique Turin; UCL Louvain; EPFL; UNI Trieste; UNI Venice; Uni Insubria.
Metrolab.Brussels, Brussels Metropolitan Region (ERDF Program).
1 km Well-being. The Urban Landscape Observatory. Collaboration with ETHZ, Prof. Ch. Girot, Funded by "Swiss cooperation project in architecture", CEPF and CUS.

Key publications since 2011

Bianchetti, C., Cogato Lanza, and E., Sampieri, A., Voghera A. (2015) *Territories in crisis*. Berlin: Jovis.
Cogato Lanza, E. and Girot, Ch. (2014) *Experimenting Proximity. The Urban Landscape Observatory*. Lausanne: PPUR.
Cogato Lanza, E., Pattaroni, L., Piraud, M., and Tirone, B. (2013) *De la différence urbaine. Les cas du quartier des Grottes à Genève*. Genève: MetisPresses.
Viganò, P., Arnsperger, Ch., Barcelloni Corte, M., Cogato Lanza, E., and Cavalieri, Ch. (2017) 'Rethinking Urban form: Switzerland as a Horizontal Metropolis'. *Urban Planning*, 2 (1), pp. 88-99. Lisbon : Cogitatio Press. doi: 10.17645/up.v2i1.871.
Cogato Lanza, E. (2014) 'The Squares of Montchoisy. Notes for an History of the Open Form in Geneva', *AAfiles*, 68, pp. 93-100.



Dieter Dietz

Associate Professor

Atelier de la conception de l'espace (ALICE)

alice.epfl.ch

Diploma in Architecture (1991, ETH Zurich)

Keywords

urban environment, architecture, embodied knowledge, protostructures, insideness, protofiguration, democracy, space, design, engagement, participation, spatial imagination and knowledge

Career trajectory

2006 to date	EPFL Lausanne / director of ALICE laboratory.
2012 to date	principal dieterdietz.org / Urban Design, Media Architecture / Zurich - Lausanne.
2006-2012	founding partner principal UNDEND Architecture SA, Zurich with Urs Egg, Christian Meili, Raffael Baur, and Dieter Vischer.
1997-2006	founding partner UNDEND Architecture, with Urs Egg, Zurich.
1996-1999	scientific collaborator, junior faculty, ETH Zürich, Prof.Marc Angélil.
1993-1996	Herzog & de Meuron, Basel.
1991	Master in Architecture, ETH Zurich.
1985-1991	Studies in Architecture, ETH Zurich and The Cooper Union New York.
1987-1989	Diane Lewis Architects, New York.
1987	Diana Agrest&Mario Gandelsonas Architects, New York.

Research mission & relevance

ALICE research explores the theoretical grounds, design methodologies and social dynamics towards what the lab has named 'Architectures of Contribution' – in reference to Bernard Stiegler's proposition of an 'economy of contribution' (Stiegler, 2012). Fundamental research projects at ALICE have examined a first cycle of Space and Democracy, and now embark on Protostructures Research Platform – developing projects like "Protofiguration - Towards a Theory of Operations", or "In Translation, Drawing as a Technical Object". More generally, the relationship between the collective construction of architectural knowledge through direct exposure to techniques, technology, craftsmanship, and embodied spatial experience is developed in close relation to research and pedagogical formats like ENAC Unité d'enseignement (UE) and ALICE's Design studios (first year architectural design, Master and diploma design projects). The ALICE HOUSE series hypothesizes the capacity of large groups to design and build together installation artefacts as co-authors, based on the capacity of protostructures to federate design and construction processes and allow for a 'negotiation of the space of social difference' (Sennett, 2012). The ALICE research lab engages currently in several projects and studies at urban scale and is part of a larger team for the 'Consultation sur le Grand Genève' and is leading design studies on urban transformations in the Greater Paris context in collaboration with RATP.



Bibliometric indicators

Publications released from 2011 to 2019, including:

16 journal articles. 14 book chapters. 5 books. 2 conference papers.

Most important grants since 2011

Becoming Léman: international collaboration for on-site installations, 2018 – 2019; with FAS (Fondation des Architectes Suisses Romandie), and Evian Resorts (ca. € 140k)

HOUSE 3, Installation at CIVA Brussels, KANAL – Centre Pompidou, KANAL Foundation Brussels, (€ 100k)

METROLAB / ID métro, design research format for spatial design for the metro of the future. RATP and Alstom, Paris, 2012 - 2016 (CHF 265k)

Innovation, technology transfer & impact on society

2015-2016 COS, aménagement de la place Cosandey, EPFL Lausanne (CHF 128k)

2011-2018 MJHL 2.2, Montreux Jazz Heritage Lab, diff phases (CHF 435k)

2012-2013 L'Etoile d'Avenches, Les Arènes d'Avenches (CHF 94k)

Honors, memberships, scientific community services

2018 to date	member Commission d'enseignement, SAR/ENAC/EPFL Lausanne.
2018	Distinction de l'Ouest, Winner for Place Cosandey, with ALICE EPFL.
2017	Design Preis Schweiz / Design Prize Switzerland, Winner Category Research for House 1 with ALICE EPFL.
2015	AVIGNON, Architecture Competition, 1st prize For Public Exterior Theater Gessnerallee, Zurich, Switzerland.
2015	OFFSHORE, Architecture and Concept Competition, 2nd prize for the Swiss National Expositions in 2027, with bureau A and ALICE.
2013	Design Prize Switzerland, Winner Category Marketfor the Montreux Jazz Heritage Lab, with ALICE and EPFL+ECAL LAB.
2012 to date	member Research Commission EPFL Lausanne.

Main cooperative work / collaborative projects

HOUSE series (1, 2 & 3, experimental format for collaborative design and construction, Partners: ZHdK Zurich, CIVA / KANAL – Centre Pompidou, Brussels (CHF 60k + CHF 148k + CHF 328k)
MUSEOMIX, experimental museum scenography, ECAL & ARTLAB, Lausanne (CHF 8k).
2016-19 COS, The Disc / la place Cosandey, EPFL Lausanne (CHF 128k + 22k)

Key publications since 2011

Dietz, D., Negueruela del Castillo, D., Lafontaine Carboni, J., and Mignon, A. (forthcoming 2019) 'HOUSE 1 as Scaffolding and Protostructure. Wood Collaborative Design and Construction in First Year Studio Teaching at EPFL', in: Bianconi, F., Filippucci, M. (eds) *Digital Wood Construction. Innovative Techniques of Representation in Architectural Design*. Cham: Springer International Publishing.

Negueruela del Castillo, D., Dietz, D., Lafontaine Carboni, J., and Mignon, A. (forthcoming 2019) 'Transformational Identities, Learning Scaffolding and Spatial Knowledge in Architectural Education', in: Thompson, J. (Ed.) *Flipping the Script: Foregrounding the Architecture Student – Charrete, Journal of the Association of Architectural Educators*. 6(1).

Dietz, D., Dupuis, A., Lafontaine Carboni, J., and Negueruela del Castillo, D. (2018) 'Réapprendre l'espace public', in Coen, L. (Ed.) *Replay Malley. Animer la friche. - Cahiers de l'Ouest* 3. Gollion: InFolio.

Dietz, D., Michel, M., and Zamarbide, D. (eds) (2018) *All About Space. Vol 3. Beyond the Object*. Zürich: Park Books.

Dietz, D., Michel, M., and Zamarbide, D. (eds) (2017) *All About Space. Vol 2. House 1 Catalogue*, 2nd edition. Zürich: Park Books.



Corentin Fivet

Assistant Professor, Tenure Track Structural Xploration Lab (SXL)

sxl.epfl.ch

PhD in Engineering Sciences (2013, UCLouvain, Belgium)
Master in Architectural Engineering (2008, UCLouvain, Belgium)

Keywords

load-bearing systems for buildings, structural design, circular economy, reuse

Career trajectory

2016 to date	Tenure-Track Assistant Professorship, EPFL.
2015-2016	Lecturer on Structural Design, MIT, USA.
2014-2015	Postdoctoral Fellowship, Architecture, MIT, USA.
2009-2013	Doctoral Thesis in Engineering Sciences, UCLouvain, Belgium.
2008-2009	Architecture internship, Charles Vandenhove. Architecture Studio, Belgium.

Research mission & relevance

Despite current efforts, the environmental impacts of the construction industry remain an urgent concern and new means must be found to lessen embodied energy demands and waste generation. Designers' efforts traditionally consist in developing systems that minimize material quantities and that use low-impact materials. A third strategy has recently been (re-)introduced: the reuse of components over multiple service lives. Still in its infancy, such 'circular industrial economy' disrupts the design practice in many ways.

In this context, the Structural Xploration Lab (SXL) forges new ways of designing load-bearing systems for architecture and structural engineering. In particular, SXL develops knowledge and tools for the user-driven exploration of structural systems that are less material-intensive and reusable. SXL also pioneers demonstrators of such systems.

Honors, memberships, scientific community services

2019	Scientific Co-chair of the fib Symposium on Conceptual Design of Structures.
2018 to date	Co-chair of the 'Life-Cycle Design and Assessment of Structures' Working Group 18 of the International Association for Shell and Spatial Structures.
2017 and 2019	Visiting Professorship at Nanjing University (NJU), China.
2017	Selection for the first Biennale Architecture Lyon.
2014	Honorary Membership, Belgian-American Education Foundation.
2013	Hangai Prize for best young paper, International Association for Shell and Spatial Structures.
2013	WBI-World Grant of Excellence.



Bibliometric indicators

16 journal papers
39 conference papers
7 invited lectures abroad

Most important grants since 2011

Build-Unbuild-Repeat (smart living lab, 91'500 CHF)
Mapping Geneva's Embodied Legacy (Habitat center, 26'000 CHF)

Innovation, technology transfer & impact on society

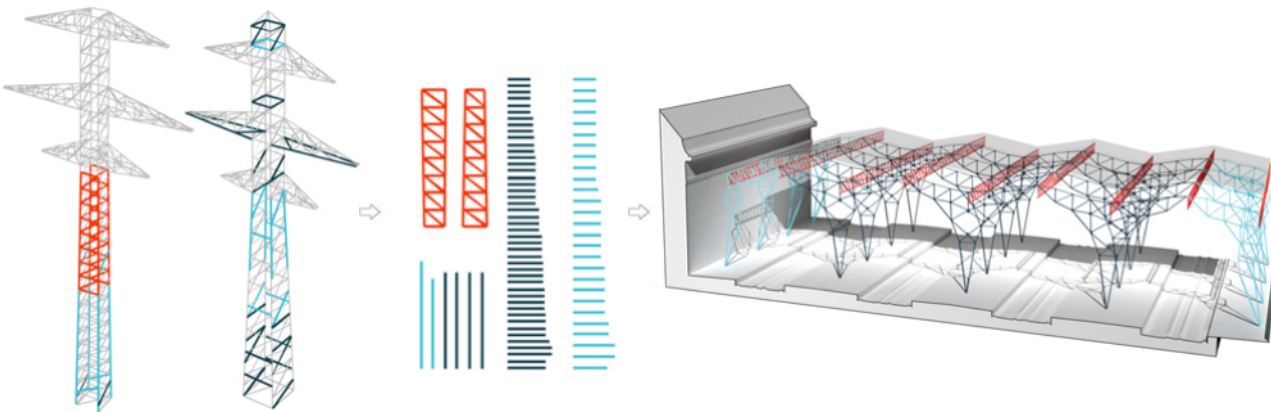
'Ultra-versatile slab-and-column system for buildings', patent application (TTO 6.1921).

Main cooperative work / collaborative projects

Collaboration (incl. experimental campaign & publications) with HEIA-FR (D. Redaelli) on the Build-Unbuild-Repeat project.
Collaboration (incl. experimental campaign & publications) with MIT (C. Mueller) and ARUP Engineering (J. Moradei, N. Sherrow-Groves) on the characterization of interlocking timber joints for frame systems in buildings.
Collaboration (incl. PhD co-advising and publications) with ETHZ (J. Schwartz) and UCLouvain (D. Zastavni) on the development of vector-based graphic statics for the explorative design of spatial structural systems.

Key publications since 2011

Brütting J., Desruelle J, Senatore G., and Fivet C. (2019) *Design of Truss Structures Through Reuse*. *Structures*. In Press, DOI: 10.1016/j.istruc.2018.11.006.
Colabella S., D'Amico B., Hoxha E., and Fivet C. (2017) 'Structural Design with Reclaimed Materials: an Elastic Gridshell out of Skis', *Proceedings of the IASS Annual Symposium 2017: Interfaces: architecture.engineering.science*, Hamburg, Germany.
Lee J., Mueller C., and Fivet C (2016) 'Automatic generation of diverse equilibrium structures through shape grammars and graphic statics', *International Journal of Space Structures*, 31(2-4), 146-163, DOI:10.1177/0266351116660798
Fivet C. and Zastavni D. (2015) 'A fully geometric approach for interactive constraint-based structural form-finding', *Computer-Aided Design Journal*, Elsevier, 61, 42-57, DOI: 10.1016/j.cad.2014.04.001
Fivet C. and Zastavni D. (2012) 'Key methods from Robert Maillart's Salginatobel design process (1929)', *Journal of the IASS*, 53(#171), 39-47.



Anja Fröhlich

Associate Professor
Laboratory of Elementary Architecture and Studies of Types (EAST)

east.epfl.ch

Diploma in Architecture (1995, Bauhaus-University Weimar)
PhD in Civil Engineering: Architecture (2008, Bauhaus-University Weimar)

Keywords

sustainability in architectural design, usage and morphology of design types, converted use of existing buildings, decomposability of buildings, reuse of building components, localization of material resources

Career trajectory

2012 to date	Associate Professor, EAST/ENAC/IA, EPFL.
2008-2012	Academic Assistant at Bauhaus-University Weimar, Institute of Design/ Bauformenlehre, Faculty of Architecture and Urbanism.
2000-2008	Research Assistant at Bauhaus-University Weimar, Institute of Design/ Bauformenlehre, Faculty of Architecture and Urbanism.
1999 to date	Collaboration with AFF Architekten, based in Berlin.
1995-1999	Project-architect at architectural practise Prof. Pagel, Weimar.

Research mission & relevance

The laboratory's research mission is to explore the creative potential of reusable materials in architectural design in a practical and experimental way. This involves the question to what extent does sustainability influence the use and morphology of architectural shapes and details. Existing material is taken as a starting point to create new buildings. Prototypes are being developed due to dismantling and demolition of existing valuable buildings.

The goal of knowledge accumulation is the development of an open source for the reuse of building materials focused on design principles, design strategies and the localization of material resources.

Honors, memberships, scientific community services

2017	Member of the ETH women professors' forum.
2016	Member of the editorial board of the scientific journal <i>Archithese</i> .
2016	Bauen im Bestand Preis [Award for exemplary solutions in dealing with existing buildings].
2008	Architecture Prize Concrete.
2005	European sand-lime brick prize.
2001	Thuringian Housing Award.
1997	Member of the Architectural Association Berlin, Germany.



Bibliometric indicators

3 edited books in co-authorship
4 book chapters

Innovation, technology transfer & impact on society

2018: Establishing of a catalog/ database of the architectural elements of the former agricultural research building complex in St. Aubin, that could be dismantled and reused for the construction of a new building.

Main cooperative work / collaborative projects

2016: The Cabanon Art Pavilion: IOC (International Olympic Committee) UNIL Association Le Cabanon.
2017: The A Neuve Twin Pavilions: CAS (Club Alpin Suisse) Section des Diablerets.
2018: The Traverse Art Pavilion: AKG (Amt für Kulturgüter Fribourg) UNIL (Université de Lausanne) Association Le Cabanon.

Key publications since 2011

Fröhlich, M., Fröhlich, A., Borges, T. B., and Lippok, S. F. (2019) *Plans and Images, An Archive of Projects on Typology in Architecture 2013-2018*. Lausanne: EAST.
Fröhlich, M. and Fröhlich, A. (2018) 'Für eine Logik des Weiterbauens. Wie wir zu einem Verständnis von Altbauten als Rohstoffe für Neues kommen', *werk, bauen+wohnen* 11/2018, pp. 43-45.
Fröhlich, A. and Fröhlich, M. (2015) *Private City Berlin / Renens*. Lausanne: EAST-CO.



Martin Fröhlich

Associate Professor
Laboratory of Elementary Architecture and Studies of Types (EAST)

east.epfl.ch
Diploma in Architecture (1994, Bauhaus-University Weimar)

Keywords

sustainability in architectural design, usage and morphology of design types, converted use of existing buildings, decomposability of buildings, reuse of building components, localization of material resources

Career trajectory

2012 to date	Associate Professor, EAST/ENAC/IA, EPFL.
2009-2010	Visiting Professor at the University of Arts Berlin, College of Architecture, Media and Design.
1996-1997	Visiting Professor at University of applied sciences Magdeburg.
1995-2002	Academic Assistant at Bauhaus-University Weimar, Institute of Design/ Bauformenlehre, Faculty of Architecture and Urbanism.
1995	Founder and director of AFF Architekten, based in Berlin.
1994	Project-architect at architectural practise Prof. Schütz and Ziemke, Weimar.

Research mission & relevance

The laboratory's research mission is to explore the creative potential of reusable materials in architectural design in a practical and experimental way. This involves the question to what extent does sustainability influence the use and morphology of architectural shapes and details. Existing material is taken as a starting point to create new buildings. Prototypes are being developed due to dismantling and demolition of existing valuable buildings.

The goal of knowledge accumulation is the development of an open source for the reuse of building materials focused on design principles, design strategies and the localization of material resources.

Honors, memberships, scientific community services

2018to date	Member of Foundation board of triennial Bex and Arts, Bex Aigle Monthey.
2018	Bund Deutscher Architekten_BDA Prize [Association of German Architects' award].
2018	Heinze Architekten Award.
2016	Bauen im Bestand Preis [Award for exemplary solutions in dealing with existing buildings].
2015 to date	Member of Steering board, Archizoom Gallery, EPFL.
2002 to date	Jury participations in numerous international architectural competitions.
1997	Member of the Architectural Association Berlin, Germany.



Bibliometric indicators

237 citations
3 edited books in co-authorship
2 book chapters
42 public lectures abroad

Innovation, technology transfer & impact on society

2018: Establishing of a catalog/ database of the architectural elements of the former agricultural research building complex in St. Aubin, that could be dismantled and reused for the construction of a new building.

Main cooperative work / collaborative projects

2016: The Cabanon Art Pavilion: IOC (International Olympic Committee) UNIL Association Le Cabanon.
2017: The A Neuve Twin Pavilions: CAS (Club Alpin Suisse) Section des Diablerets.
2018: The Traverse Art Pavilion: AKG (Amt für Kulturgüter Fribourg) UNIL (Université de Lausanne) Association Le Cabanon.

Key publications since 2011

Fröhlich, M., Fröhlich, A., Borges, T. B., and Lippok, S. F. (2019) *Plans and Images, An Archive of Projects on Typology in Architecture 2013-2018*. Lausanne: EAST.

Fröhlich, M. and Fröhlich, A. (2018) 'Für eine Logik des Weiterbauens. Wie wir zu einem Verständnis von Altbauten als Rohstoffe für Neues kommen', *werk, bauen+wohnen* 11/2018, pp. 43-45.

Fröhlich, M. (2017) 'Tischgespräche Vision. Tisch Orange', in Biechteler, H. and Käferstein, J., *Architekturpädagogiken. 5 x 2 Gespräche*. Zürich: Park Books, pp. 225-251 [Bestandsaufnahme und Visionen zur Architekturausbildung: Referate und Tischgespräche des ersten Symposiums für Architekturpädagogiken der Hochschule Luzern].

Fröhlich, A. and Fröhlich, M. (2015) *Private City Berlin / Renens*. Lausanne: EAST-CO.

Fröhlich, M. and Fröhlich, S. (2013) 'In love to', in Ring K. *AFF Architects "In Love, To." in the FORMULA_X Series*. Berlin: DAZ [AFF Architects Interview and Office Portrait].



Roberto Gargiani



Full Professor
Laboratory of Theory and History of Architecture 3 (LTH3)

lth3.epfl.ch
PHD in History of Architecture (1992, University of Florence)
Master in Architecture (1983, University of Florence)

Keywords
history of architecture, history of construction, concrete

2015-2017	Director, Archives de la Construction Moderne, Lausanne, Switzerland.
2011-2015	Director, Section of Architecture, ENAC.
1998-2005	Associate Professor, then Full Professor, Faculty of Architecture, Università degli Studi Roma Tre, Italy.
1998-2000	Associate Professor, Ecole d'Architecture, Ville et Territoires in Marne-la-Vallée, Paris, France.
1994-1997	Associate Professor, Ecole d'Architecture de Normandie, Darnetal, Rouen.

Research mission & relevance
The cultural framework of LTH3's research can be summarized by a definition used in architectural treatises and essays, that of “perfect construction”.
LTH3's research was initially dedicated to define a “new history of construction”, based on the break-down of architecture into its constitutive elements–column, lintel, floor, platform, etc.– published in two volumes with the contribution of eminent international scholars. Moreover, the laboratory tackled the work of some of the protagonists of contemporary architecture, such as Rem Koolhaas, the so-called “Architettura Radicale” and Aldo Rossi, which resulted in published monographs. The laboratory's research was then oriented on the reconstruction of the history of reinforced concrete, its structures, formwork and surface finishes. Financed by the European Research Council between 2009 and 2015, this research is still in progress and is aimed to the reconstruction of the technical evolution of concrete starting from the first Ancient Roman experiments, to contemporary productions. In the meantime, research on debates originated from the “Architettura Radicale” and Koolhaas resulted in other published and forthcoming essays, both on art (Karsten Föding, Arte Povera, Robert Smithson, etc.) and architecture (Office KGDVS).

2018 to date	Committee Member of Ph.D. School (Sapienza Università di Roma, Politecnico di Bari).
2018 to date	Commission de la Recherche (Ecole d'Architecture Paris-Malaquais, Paris; Ecole d'Architecture de la Ville & des Territoires, Marne-la-Vallée).
2016-2019	Editorial Advisory Panel, <i>Aedificare</i> , Association Francophone d'Histoire de la Construction, France.

Bibliometric indicators
97 publications
14 journal articles
46 book chapters
25 books

Most important grants since 2011
2009-2015, ERC Advanced Grant, *The surface of cement and reinforced concrete. A history of formwork and processing of surface, 1870-2008.*

2012-2013, Swiss National Science Foundation, project *Sinergia Lombardy 14th-16th Century.*

2009-2012, Swiss National Science Foundation, project *Aldo Rossi: les œuvres du rationalisme exalté.*

Innovation, technology transfer & impact on society
2017: Exhibition *Karsten Föding - Graue Energie*, Lausanne, Archizoom.
2008-2010: Exhibition *Archizoom Associati 1966-1974. De la vague pop à la surface neutre*, Lausanne, Firenze, Mendrisio.

2015-2018	Board of Directors, Fondation Le Corbusier, Paris, France.
2014 to date	Scientific Advisory Board, Comité des experts pour l'œuvre architecturale, Fondation Le Corbusier, Paris, France.
2013 to date	Editorial Director, Collection <i>Treatise on Concrete</i> , EPFL Press.
2013	Committee Member, Comité d'évaluation académique ENAC.
2013-2018	Scientific Committee, Archivio del Moderno, Academy of Architecture, Mendrisio, Switzerland
2012 to date	Editorial Advisory Panel (<i>Construction History. International Journal of the Construction History Society</i> , United Kingdom; <i>Massilia</i> , Fondation Le Corbusier, Paris, France).
2012 to date	Member of Construction History Society.
2012	Committee Member, Ministère de la Culture Français, Comité d'Orientation, <i>Projet de réforme de l'enseignement et de la recherche dans les écoles d'architecture.</i>
2005	Committee Member of Ph.D. School, ENAC, EPFL.

Main cooperative work / collaborative projects
Gargiani, R. (ed) (2014) *L'architrave, le plancher, la plate-forme. Nouvelle histoire de la construction*, Lausanne: PPUR.
Gargiani, R. (ed) (2008) *La colonne. Nouvelle histoire de la construction*, Lausanne: PPUR.

Key publications since 2011
Gargiani, R. and Rosellini, A. (2018) *Valori primordial e ideologici della materia, da Uncini a LeWitt. Sculture in calcestruzzo dal Novecento ad oggi.* Roma: Aracne.
Gargiani, R. and Bologna, A. (2016) *The Rhetoric of Pier Luigi Nervi. Concrete and Ferrocement Forms*, Lausanne: EPFL Press [Treatise on Concrete].
Gargiani, R. (2014) *Louis I. Kahn, Exposed Concrete and Hollow Stones, 1949-1959*, Lausanne: EPFL Press [Treatise on Concrete].
Gargiani, R. (2013) *Concrete, from Archeology to Invention 1700-1769*, Lausanne: EPFL Press [Treatise on Concrete].
Gargiani, R. and Rosellini, A. (2011) *Le Corbusier: Béton Brut and Ineffable Space, 1940-1965*, Lausanne: EPFL Press [German translation, Berlin: Edition Detail, 2014].



Kersten Geers

Associate Professor Laboratory for Architecture as Form (FORM)

form.epfl.ch

Diploma Architect-Civil Engineer (1994-1999, University of Ghent & Escuela Técnica Superior de Arquitectura, Madrid)

Keywords

architectural design and research, history and theory of architecture, urban architecture

Career trajectory

2019	Visiting professor at GSAPP Columbia University, New York.
2018	Visiting professor at GSD Harvard University, Boston.
2018	Visiting professor at GSAPP Columbia University, New York.
2017	Visiting professor at AHO Oslo University, Oslo.
2017	Visiting professor at GSD Harvard University, Boston.
2017	Visiting professor at GSAPP Columbia University, New York.
2016	Visiting tutor at Oxford University, Oxford.
2016	Visiting professor at GSD Harvard University, Boston.
2016	Visiting professor at Yale University, New York.
2015	Visiting professor at GSD Harvard University, Boston.
2014	Visiting tutor at Porto Academy '14, Porto.
2014	Visiting professor at Slipakorn University, Bangkok.
2013	Masterclass at Tokyo Tech University.
2013	Visiting professor at GSAPP Columbia University, New York.
2013 to date	Associate professor at ENAC EPFL University, Lausanne.
2010 to date	Co-founder and Editor of San Rocco Magazine
2002 to date	Founding partner of OFFICE Kersten Geers David Van Severen.

Research mission & relevance

The objective of FORM Laboratory is architectural education. Reviving the idea that architecture ultimately deals with itself, the method of our teaching relies on investigating and re-evaluating the examples of architectural knowledge, in order to develop a design theory. Operating within the contemporary realm of market driven efficiency, our aim is to discern possibilities for architecture as cultural discipline which is both technologically advance and aware of its humanistic values. These concerns have been developed within the project "Architecture Without Content", which uses the traditional dichotomy between frame and content as an educational tool to reconnect contemporary architecture to the universal design principles. This is an architecture of intentions, not inventions. We believe that developing a discourse which attempts to articulate precise intentions, is of outmost relevance in architectural education today.



Bibliometric indicators

Since 2010:
36 articles
5 books
40+ invited lectures

Most important grants since 2011

2015: *The Difficult Whole*, Graham Foundation Grant.
2015: SNF Project Funding Grant.
2014: *Bramante: An Introduction*, Graham Foundation Grant.

Honors, memberships, scientific community services

2016	Staalbouwprijs (Steel Building Award), category 'Elements'.
2016	Staalbouwprijs (Steel Building Award), category 'Industry'.
2016	Berlin Art Prize, category Architecture.
2015	Belgian Prize for Architecture, category 'Small Interventions'.
2014	Dixième Prix Européen d'Architecture Philippe Rothier: Honorable Mention.
2013	Belgian Prize for Architecture, category 'Non-residential Private'.
2013	Belgian Prize for Architecture, category 'Single Family Housing'.
2013	'In Pursuit of Architecture': the 10 best buildings of the decade.
2010	Silver Lion at the Venice Biennial for Architecture for 'Most Promising Young Practice'.

Main cooperative work / collaborative projects

> 2016: Architecture Foundation Masterclass, in collaboration with The Architecture Foundation London and Oxford University.
> 2015: Industrial Architecture: Ábalos&Herreros selected by OFFICE Kersten Geers David Van Severen, curatorial work and exhibition in collaboration with CCA Montreal.
> 2013: San Rocco Summer School, in collaboration with University of Genoa.

Key publications since 2011

Geers, K., Van Severen, D., and Borasi, G. (eds) (2018) *Besides, History: Go Hasegawa, Kersten Geers, David Van Severen*. Montreal: Canadian Centre for Architecture. Buchhandlung Walther König and Kajima Institute.
Geers, K., Van Severen D., et al. (2017) *OFFICE Kersten Geers David Van Severen*. Vols. 1, 2 & 3. Köln: Buchhandlung Walther König.
Geers, K., Van Severen D., et al., (2016) 'OFFICE Kersten Geers David Van Severen. Primary Actions, *El Croquis*, 185 (Barcelona).
Geers, K. et al. (eds) 2016) *The Difficult Whole*. Zurich: Park Books.
Geers, K., Van Severen D., et al. (2012) *2G N.63 OFFICE Kersten Geers David Van Severen*. Barcelona: Gustavo Gili.



Franz Graf

Associate Professor
Techniques and Preservation of Modern Architecture
Laboratory (TSAM)

tsam.epfl.ch
Diploma in architecture (1983, EPF Lausanne, Suisse)

Keywords

modern and contemporary construction systems, reuse and restoration of 20th-century architecture

Career trajectory

2007 to date	Associate professor, ENAC-IA.
2005 to date	Full professor in technology, Accademia di Architettura, USI.
2005-2006	Visiting professor, EPFL-ENAC-SAR.
1989-2006	Senior Scientist, University of Geneva, Institute of Architecture.
2000 to date	Graf et Menoud architects, Geneva.
1990-2000	Wolf et Graf architects, Annecy.

Research mission & relevance

The Laboratory develops and advances knowledge concerning the techniques and conservation of modern and contemporary architectural heritage. This multidisciplinary field involves historical research as well as materials and building practice, economics and environment. It also involves working to develop specific strategies relating to project design (maintenance, conservation, restoration, rehabilitation, renovation, re-use and extension) in which theoretical and technical knowledge come together. The primary objectives of the TSAM are teaching, research and the development of services in the Laboratory's specialist areas of Building technologies and building services engineering and Conservation and re-use of modern architecture.

Honors, memberships, scientific community services

2018 to date	Editorial Board Politecnico di Bari, Italy.
2017 to date	Former member ICOMOS.
2017 to date	Editorial Board ETSA/Universidad Politecnica de Valencia, Spain.
2017-2018	Scientific Committee of the Docomomo 15th International Conference, August 2018, Ljubljana, member.
2017-2018	Scientific Committee of the 6th International Congress on Construction History, July 2018, Brussels, member.
2017 to date	Scientific Committee for the Conservation plan for the stadio Flaminio de Pier Luigi Nervi, Getty Fondation, member.
2017 to date	Expert FNRS.
2017 to date	Editorial Board member of Aedificare.



Bibliometric indicators

Journal articles: 57
Professional press articles: 8
Research monographs: 34
Edited books: 13
Conferences papers: 46
Sole authorship: 28
Since 2011, tot: 148
Students: 8
Public lectures (since 2011): 86
Book chapters: 29

Most important grants since 2011

F. Graf (P.I.), G. Marino (Co. PI), Architectural and Energy Study of the WIPO's Headquarters in Geneva, funded by World Intellectual Property Organization, WIPO, Geneva, 2017-now, 77'500 chf.

F. Graf (P.I.), G. Marino (Co. PI), Preliminary studies for the restoration of Le Corbusier's studio-apartment in Paris, funded by Fondation Le Corbusier and the Getty Foundation-Los Angeles, program Keeping It Modern, Architectural conservation Grants, 2014-2016, 15'000 euros.

F. Graf (P.I.), G. Marino (Co. PI), Heritage, energy, economy : collective housing in Europe, 1945-2015, funded by Stiftung zur Förderung der Denkmalpflege, Zurich, program Energy and Heritage, 2013-2016, 75'000 chf.

Innovation, technology transfer & impact on society

Multi-criteria assessment approach for building refurbishment.

Honors, memberships, scientific community services (continued)

2016 to date	Comité scientifique du Programme interministériel de recherche <i>Architecture du XX^e siècle, matière à projet pour la ville durable</i> .
2015 to date	ICOMOS Hotel suisse, Jury, member.
2013 to date	Permanent member of the Politecnico di Milano Doctoral School.
2013 to date	Ecole nationale supérieure d'architecture et de paysage de Lille (ENSAPL), Member of scientific committee.
2012 to date	Comité des experts, Fondation Le Corbusier, member. 2011 to date Commission d'enseignement, ENAC-SAR, member.
2011 to date	Former member of SIA, Société des ingénieurs et des architectes suisses and FAS, Fédération des architects suisses.

Main cooperative work / collaborative projects

2013 to date: *Les immeubles pour les Organisations internationales à Genève. Etude patrimoniale et stratégies d'intervention*, Permanent Mission of Switzerland to the United Nations Office and to the other international organizations in Geneva, Swiss Confederation; Office du patrimoine et des sites, DCTI, Canton GE; Foundation for Buildings for International Organisations (FIPOI); with te support of: World Health Organization, United Nations Office in Geneva, International Labour Organization, International Telecommunication Union .
2015 to date: *La buvette de la source Cachat à Evian (Jean Prouvé, Maurice Novarina, 1955-1957). Lignes-guide pour la restauration et la valorisation*, Federation of Swiss Architects, FSA-BSA Romandie-Lausanne; Danone, Paris.
2008-2012: *Critical encyclopaedia of restoration and re-use of twentieth-century architecture*, Project funded by the CUS (Swiss university conference) Research undertaken in the framework of the *Swiss cooperation project in architecture*, EPFL in collaboration with the Accademia di architettura - USI, the EPFZ and Scuola Universitaria Professionale della Svizzera Italiana- SUPSI.

Key publications since 2011

Graf F. and Marino, G. (2018) *La Buvette d'Évian. Maurice Novarina, Jean Prouvé, Serge Ketoff. 1955-2018*, Gollion: Infolio.
Graf F. and Marino, G. (2017) *Les multiples vies de l'appartement-atelier. Le Corbusier*. Cahiers du TSAM, N° 2, Lausanne: PPUR.
Graf F. and Marino, G. (2016) *Building Environment and Interior Comfort in 20th-Century Architecture: Understanding Issues and Developing Conservation Strategies*, Lausanne: PPUR.
Graf F. (2014) *Histoire matérielle du bâti et projet de sauvegarde*, Lausanne: PPUR.
Graf F. and Delemontey, Y. (2012) *Understanding and Conserving Industrialised and Prefabricated Architecture*, Lausanne: PPUR.



Harry Gugger

Full Professor
Laboratoire Bâle (LABA)

laba.epfl.ch
Diploma in Architecture (1990, ETH Zurich)

Keywords

teaching and research in architectural, urban and territorial design, urban nature, ecological contextualism

Career trajectory

2005 to date	Full Professor, EPFL. - Laboratoire Bâle (LABA), Basel, 2011 to date. - Laboratoire Pour la Production de L'Architecture (LAPA), Lausanne, 2005–2011.
2010 to date	Principal, Harry Gugger Studio.
2011–2012	Visiting Professor, Oslo School of Architecture and Design (AHO).
2000–2006	External Examiner, AA School of Architecture, London
2001	Visiting Professor, EPFL.
1994	Visiting Professor, Hochschule für Architektur und Bauwesen, Weimar.
1990–2010	Partner, Herzog de Meuron.

Research mission & relevance

Laboratoire Bâle (laba) is an architecture and urban design studio of the École Polytechnique Fédérale de Lausanne (EPFL), based in Basel. laba is devoted to the investigation of spatial design at the interface between urban processes and architectural objects. It is laba's conviction that design is both an intellectual and artistic product that takes place on all scales of the urban, and therefore, laba's projects span from territorial planning to architectural detailing.

LABA's year long studio is split into three moments that convey a full journey from territorial research, to on-site field work, to architectural design. Its didactic goal is to bring the creation of the architectural object to a critical position in relation to the environment. The first part, Territory, is taught in the first semester and assisted by the Teaching Unit U - Cartography. The second part, Field, is held between semesters and consists of a trip to the site. The third part, Architecture, consists of the development of a site-specific and contextual architectural design that acts as proof of concept for the territorial constitution developed in the first semester.



Bibliometric indicators

4 book contributions
12 books

Most important grants since 2011

The role of Ocean Space in Contemporary Urbanisation, FNS.

URBAN LAB+: International Network of Urban Laboratories, Erasmus Mundus.

Urban Laboratory Network. Understanding urban dynamics, identifying future planning strategies, and implementing educational cooperation, Erasmus Mundus.

Honors, memberships, scientific community services

2015 to date	Representative of ENAC IA at Architekturrat Schweiz.
2012	Most Beautiful German Books for <i>Barents Lessons</i> , Zurich: Park Books.
2012	Most Beautiful Swiss Books for <i>Barents Lessons</i> , Zurich: Park Books.
2010	Golden Lion, Venice Architecture Biennale for <i>Reclaim</i> , exhibition in the national pavilion of the Kingdom of Bahrain.
2010 to date	Member, LafargeHolcim Foundation Zurich for Sustainable Construction.
2004	Swiss Art Awards, Meret Oppenheim Prize for life work.
2003	With Herzog and de Meuron: RIBA Stirling Prize for the Laban Dance Center, London.

Main cooperative work / collaborative projects

Studio INDUSTRIAL ARCADIA: Israel 2016/17. Technion, Faculty of Architecture and Town Planning

Studio INDUSTRIAL NOSTALGIA: Venice 2015/16. UNIVERSITA IUAV DI VENEZIA

Studio INDUSTRIAL ICELAND 2014/15. Listaháskóli Íslands, Iceland Academy of Arts

Key publications since 2011

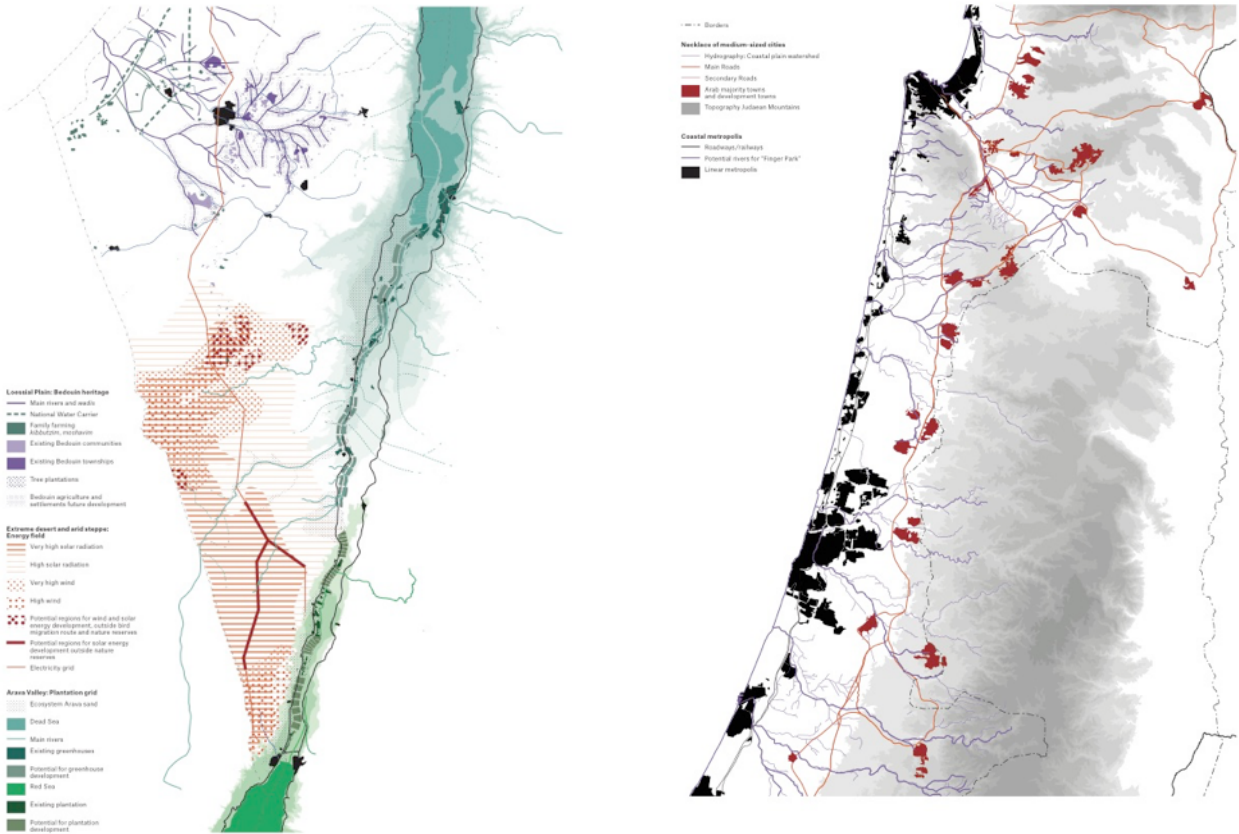
Gugger, H. et al. (eds) (2017) *Israel Lessons: Industrial Arcadia*. Zurich: Park Books.

Gugger, H. et al. (eds) (2016) *Venice Lessons: Industrial Nostalgia*. Zurich: Park Books.

Gugger, H. et al. (eds) (2015) *Icelandic Lessons, Industrial Landscape*. Zurich: Park Books.

Gugger, H. et al. (eds) (2014) *Swiss Lessons: Teaching and research in Architecture*. Zurich: Park Books, 2014.

Gugger H. et al. (2012) *Barents Lessons: Teaching and Research in Architecture*. Zürich: Park Books.



Jeffrey Huang

Full Professor Media x Design Laboratory (LDM)

ldm.epfl.ch

Doctor of Design (1997, Harvard University)
Master of Design Studies (1994, Harvard University)
Diploma in Architecture (1991, ETH Zurich)

Keywords

design thinking, parametric design, interactive space, smart buildings,
smart cities, digital architecture, experience design

Career trajectory

2013-2016	Dean (Head of Architecture and Sustainable Design Pillar), Singapore University of Technology and Design.
2006 to date	Full Professor, ENAC/IC, EPFL
2001-2006	Associate Professor of Architecture, Harvard University.
1998-2001	Assistant Professor of Architecture, Harvard University.
1997-1998	Researcher, MIT Sloan School of Management, Center for Coordination Sciences.

Research mission & relevance

Huang’s work explores the vision of converging physical and digital architectures. His current projects examine Artificial Design, Physical/ Digital Typologies, Digital Fabrication, and more generally, Experience Design theories. His design studios explore the application of computational urbanism in Chinese cities, including foothill typologies in Beijing, hilltop typologies in Sichuan and floodplain typologies in Guangzhou.

Past research projects include “Superstudio,” an experiment with future design studios where humans and machines co-design; “Organicity,” an exploration of code-driven design methods for generating ecological architectures and cities; “Artificial Morphogenesis,” a NSF sponsored research project into morphogenetic design processes, “Cityrank,” an experiment with bottom-up/crowd sourced rankings, “Food Urbanism,” an exploration of food and urbanity; and “SINLAB,” an investigation of the variability of performance space under the condition of new technologies.

Honors, memberships, scientific community services

2016	Jury Member, Singapore Institute of Architects, SIA Architectural Design Award.
2016	Jury Member, Land Transportation Authority Excellence Award, Singapore.
2015	Member of the External Visiting Committee, NUS Architecture, Singapore.
2014-2015	Organizing Committee Member, International Architectural Education Summit (2014-2015)
2014-2015	Member of the Design Masterplan Committee <i>Singapore 2025</i> , Ministry for Communications and Information, Singapore.
2012 to date	Chief Editor, <i>Frontiers, Digital Architecture</i> .



Bibliometric indicators

101 publications
4 edited books
50 peer-reviewed conference papers
12 journal articles
2 book chapters
8 US patents

Most important grants since 2011

Artificial Design, 2015-2017 (Role: Principal Investigator. \$550K, funded by the MIT-SUTD International Design Center).

SINLAB/Towards an Alliance between the Performing Arts and Sciences, 2011-2015 (Role: Principal Investigator. CHF 1.4M, funded by Swiss NSF Sinergia).

Superstudio: Digitalizing the Design Studio, 2009-2013 (CHF 330K, funded by the Swiss Cooperation in Architecture Program/CRUS. Role: Principal Investigator).

Innovation, technology transfer & impact on society

US Patent 9,524,090 - Methods and Apparatus for Managing and Exchanging Information Using Information Objects (with P Keel).

US Patent 7,627,831 - Interactive techniques for organizing and retrieving thumbnails and notes on large displays (P Chiu, X Sun, MJ Back, WH Polak).

US Patent 7,640,511 - Methods and apparatus for managing and inferring relationships from information objects (with P Keel).

Honors, memberships, scientific community services (continued)

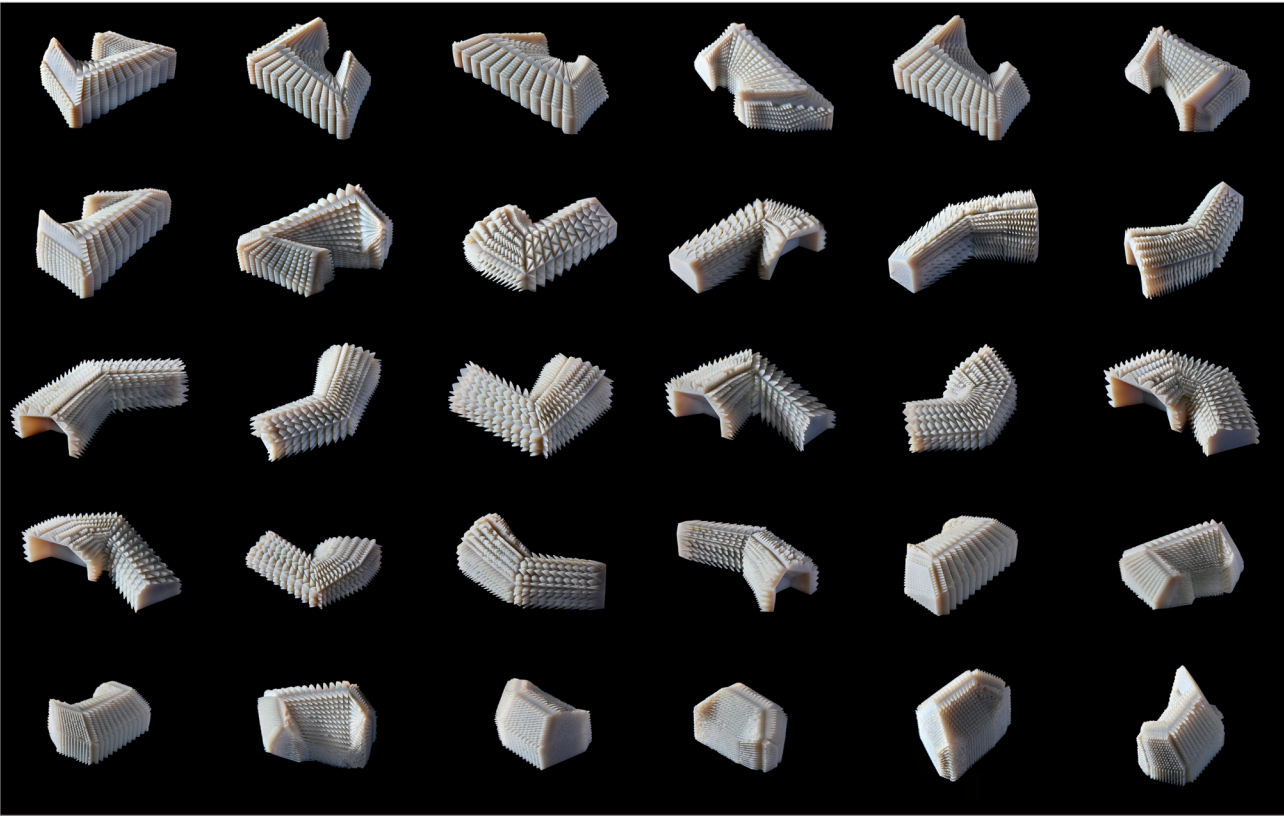
2012 to date	Berkman Center Faculty Associate, Harvard University.
2012	Visiting Professor, Tsinghua University, Department of Architecture.
2012	Jury Member, Prix Ars Electronica, Linz.
2011-2012	Berkman Fellow, Harvard University, Berkman Klein Center for Internet & Society.

Main cooperative work / collaborative projects

Artificial Design. Collaboration with MIT Artificial Intelligence Lab (Patrick Winston and Paul Keel, CSAIL), and Singapore University of Technology and Design (Artificial Design Lab).
SINLAB. Collaboration with EPFL, ZHdK, HEAD, La Manufacture, Ludwig Maximilian University Munich, Tsinghua University.
Superstudio. Collaboration with EPFL, ETHZ (Fabio Gramazio, Matthias Kohler, Laurence Stalder), Mendrisio (Pau Sola Morales).

Key publications since 2011

Huang, J., Rey, A., and von Fischer, S. (2019, forthcoming) *Staging Space. The Architecture of Performance in the 21st Century*, Zurich: Park Books.
Huang, J., Ortner, P., and Doumptioti, C. (2018) *Xixinan: Rural Return*, Lausanne: MxD Books.
Huang, J. and Viray, E. (2017) *Forming/Unforming*, Singapore: SUTD Books.
Huang, J. (2015) ‘Growth Typologies, Localities and Defamiliarisation: Experiments with Artificial Urbanism in Sichuan, Guangzhou and Beijing’. *Archit Design*, 85: 70-75. doi: 10.1002/ad.1980.
Meagher, M., Huang, J., Zuelzke, N., Patt, T., Labelle, G., and Nembrini, J. (2015) ‘Code and its image: the functions of text and visualisation in a code-based design studio’, *Digital Creativity*, 26 (2), pp. 92-109.



Vincent Kaufmann

Associate Professor Urban Sociology Laboratory (LaSUR)

lasur.epfl.ch

PhD in science (1998, EPFL)

M.A. in sociology (1992, University of Geneva)

Keywords

mobility, motility, sociology, lifestyles, urban and regional planning

Career trajectory

2010 to date	Associate professor of Urban Sociology and Mobility at EPFL.
2003-2010	Assistant professor of Urban Sociology and Mobility at EPFL.
2001-2003	Post-doc researcher at Laboratoire Techniques, Territoires et Société (LaTTS), Ecole Nationale des Ponts et Chaussées (France).
2000-2001	Post-doc researcher at the University of Lancaster (Great Britain).
1992-1999	Research assistant at EPFL.
1993-1996	Research assistant at University of Lausanne.

Research mission & relevance

The LaSUR confronts urban phenomena through the mobility capacities of its actors. In this perspective, the principal research themes are daily mobility, residential history, the dynamics of suburbanization and gentrification, public space, and network management.

The major scientific breakthroughs resulting from Vincent Kaufmann's work are:

- > The conceptualization of mobility, with the development and operationalization of the concept of motility. This work has had an important impact internationally, as evidenced by its extensive use by researchers from various disciplines.
- > Lifestyle aspirations and their link to residential location. This work has been conducted in collaboration with several EPFL architecture professors
- > The territorial implications of mobility and ways in which different forms of mobility help shape cities and territories, and how public policies influence these mobilities.

Honors, memberships, scientific community services

2018 to date	Member of the EPFL Research Commission Membership of the scientific board of: Revue Française de Sociologie, Applied Mobilities, Transfer, Brussels Studies, Recherche Transport Sécurité. Reviewing activities for research foundations: FNS, ANR, EU research Programs.
2015 to date	Head of the EDAR Doctoral Program.
2011 to date	Scientific Director of the Mobile Lives Forum.
2003	Invited researcher at Ecole Nationale des Ponts et Chaussées (Paris) .



Bibliometric indicators

Google Scholar (March. 2019) h = 33, 6643 citations

180 peer-reviewed publications (96 since 2011)

29 books

Most important grants since 2011

JobMobilities and Familylives in Europe (EU research program)

Sinergia research program *Post Car World* (SNF)

Les Communs Transfrontaliers. Quelles modalités pour l'intégration des métropoles transfrontalières en Europe? (SNF)

Innovation, technology transfer & impact on society

The Exhibition *Mobile / immobile*, at Musée des Archives Nationales, Paris. January – April 2019. <http://www.archives-nationales.culture.gouv.fr/mobile-immobile>

2014: The Bande Dessinée *Slices of (Mobile) Lives* Paris: Loco éditions [French and English versions].

ENAC Innoseed Money Urby-me <https://actu.epfl.ch/news/public-transport-users-can-download-urby-me/>

Honors, memberships, scientific community services (continued)

2009	APERIO Prize of the best scientific paper in urbanism. Board Member of the EPFL Transportation Center TraCE. Board Member of the EPFL Habitat Research Center.
2004-2018	Invited Professor: at Université Catholique de Louvain-la-Neuve (2004-2018), Université Laval à Québec (2008), Nimegen University (2010), Université de Toulouse le Mirail (2011), Politecnico di Milano (2016) and Tongji University Shanghai (2018).
1997	Invited researcher at INRETS (Paris) 1997,

Main cooperative work / collaborative projects

2016: Cross project (UNIL EPFL) With Prof. Michel Bierlaire and Prof. Patrick Rérat. Transdisciplinarity around mobility. Publication: Bierlaire, M., Kaufmann, V., and Patrick Rérat (eds) (2017). *La mobilité en questions*. Lausanne: Presses Polytechniques et Universitaires Romandes (PPUR).

2019: LIVES NCCR (third phase) *Overcoming Vulnerability: Life course perspectives*. Collaboration between the LaSUR and UNIL, UNIGE and UNIFR.

2016: Collaborative research *Mobility 2050*, within the frame of the Cop21 – Paris, with SNCF and various international experts.

Key publications since 2011

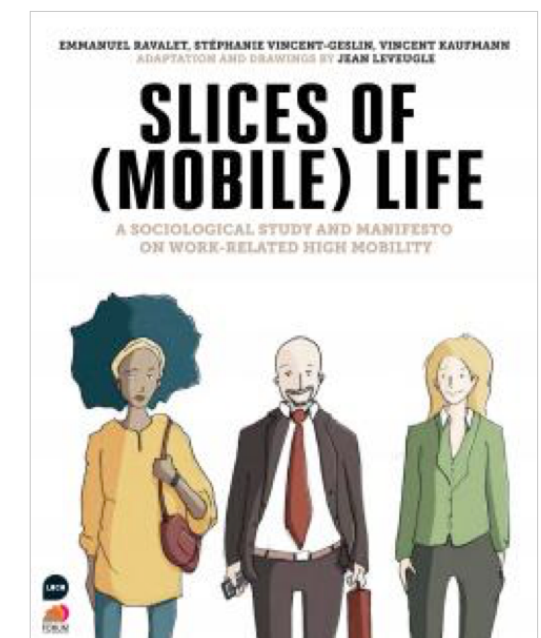
Kaufmann, V. (2018) 'Mobile Futures, in: Freudental-Pedersen, M. and Kesselring, S. (eds) *Exploring Networked Urban Mobilities: Theories, Concepts, Ideas*. London/New York: Routledge.

Kaufmann, V., Dubois, Y., and Ravalet, E. (2017) 'Measuring and typifying mobility using motility', *Applied Mobilities*, pp. 1-16.

Ander, A., Kaufmann, V., and Messer M.-A. (2016) 'Governing the Geneva Tram Network: Making Decisions without Making Choices', *Journal of Urban Technology*, 22(4), pp. 103-124.

Viry, G. and Kaufmann, V. (eds) (2015) *High mobility, work and personal life*. London: Palgrave Macmillan.

Kaufmann, V. (2011) *Re-thinking the City, Urban Dynamics and Motility*. Lausanne and London: EPFL Press Routledge.



Bruno Marchand

Full Professor
Laboratory of Theory and History 2 (LTH2)

ltha.epfl
Diploma in Architecture (1980, EPFL)
PhD Theory of Architecture

Keywords

theory of architecture, history of architecture, housing, modern movement, contemporary architecture, swiss architecture, public spaces, urbanism

Career trajectory

2014 to date	Principal, Bruno Marchand Studio
2001-2014	Senior associate, DeLaMa
2006-2010	Director of the Institute of Architecture of ENAC
2002-2006	First Director of the Doctoral School “Architecture, ville et histoire”, ENAC
1997-now	Full Professor EPFL – Laboratory of Theory and History of Architecture 2 (LTH2)
1995	Visiting Professor at the Ecole d’architecture de Nantes
1992	PhD in science

Research mission & relevance

Work on collective housing: LTH2 has been working on collective housing for a long time and published many articles and a few books on collective housing. His original approach concerns specially the analysis of typology as an expression of lifestyle, the perception of domestic spaces and the relationship to urban practices.

The theoretical aims of the 20th century architecture: The work in the theoretical aspects of the 20th century architecture has been quite a lot published, on articles and monographs. The team tries to analyses the architectural expression of an anti-heroic vision of the modernity, based on ordinary and everyday phenomena.

Urban planning: This axis of research links academic activities with Bruno Marchand’s own practice. The original point of view concerns more the strategies of planning than the formal aspect of the question. He is also lately developing a pluridisciplinary approach that concerns, in particular, the impact of environmental conditions on such urban strategies.



Bibliometric indicators

200 journal-papers
30 book contributions
20 books

Most important grants since 2011

Les ensembles bâtis du XXème siècle dans les communes de l’Ouest lausannois : un état des lieux et une ébauche de stratégie de valorisations (SDOL, 2013)
Entrepreneurial housing in southern Europe: 1960-2000. Model typologies and their diffusion (FNS, 2014)

Contrat logement Etudiants (Ville de Sion, 2014)

Honors, memberships, scientific community services

2019	Member of the Ecole d’Architecture de Versailles Peer Review Committee
2008	President of the Politecnico di Milano Peer Review Committee
2003	Bruno Zevi CICA Book Award 2005 : book Martin Steinmann, <i>Forme forte. Ecrits/Schriften 1972-2002</i> , Bâle, Birkhäuser, , edited by Jacques Lucan et Bruno Marchand
2010	Student Prize from the Assemblée Générale des Etudiants de l’EPFL, Faculté ENAC, Journée Magistrale, EPFL
2003	Student Prize from the Assemblée Générale des Etudiants de l’EPFL, Faculté ENAC, Journée Magistrale, EPFL

Key publications since 2011

Architecture du canton de Vaud 1920-1975, PPUR, Lausanne, 2012

Habiter en hauteur. Traditions organiques : des Tours de la Borde (1961-1968) de Frédéric Brugger aux réalisations contemporaines, Infolio éditions, Gollion, 2013

MIX, Mixité typologique du logement collectif. De Le Corbusier à nos jours, Cahier de théorie n°11, PPUR, Lausanne, 2014 (avec Christophe Joud)

En mutation. Conceptions urbaines, Infolio, Golion, 2015 (avec Sonia Curnier)

Surélévations. Conversations urbaines, Infolio, Golion, 2018 (avec Christophe Joud)



Luca Ortelli

Full Professor Laboratory of Construction and Conservation (LCC)

lcc.epfl.ch

Master Degree in Architecture (1983, Politecnico di Milano)

Keywords

modern housing, scandinavian architecture, german architecture, typology, public and collective space, vernacular architecture, architectural and urban rehabilitation, massive stone construction

Career trajectory

2013-2015	Visiting Professor, MDA Escuela de Arquitectura, University of Navarra, Pamplona.
2007-2008	Visiting Professor, Istituto Universitario di Architettura, Venezia.
1997 to date	Full Professor, ENAC/IA, EPFL.
1994-1996	Visiting professor, South California Institute of Architecture (Vico Morcote, CH).
1992-1996	Full Professor of Architectural design, École d'Architecture, Université de Genève.
1989-1991	Associate professor, École d'Architecture, Université de Genève.
1987	Visiting critic, University of Miami (USA).

Research mission & relevance

LCC Lab is mainly devoted to housing and rehabilitation, both in teaching and in research. The research developed at doctoral and postdoctoral level explores some fundamental European experiences in the field of social housing from an architectural perspective, meaning that the studied examples are not exclusively considered from an historical point of view but as part of the contemporary city as well.

Another domain explored at doctoral level is the rehabilitation of current housing buildings, the most fragile part of urban heritage to face technical requirements, especially in terms of energy saving.

These two topics constitute the center of the teaching activities issued from the Lab, in form of a 3rd year design studio and a Master Teaching Unit "Architecture et rehabilitation". The Master course "Histoire de l'habitation" (accompanied by the MOOC "Housing and cities") completes the teaching and research activities of LCC.

Honors, memberships, scientific community services

2018 to date	Member of the scientific Committee of the collection <i>Critica del progetto</i> , Donzelli editore, Roma.
2018 to date	Member of the scientific Committee of the review <i>ArchAlp</i> .
2015 to date	Member of the scientific Committee of the collection <i>Figure</i> , Letteraventidue, Siracusa.
2009 to date	Director of the collection <i>Architecture Essais</i> , PPUR / PFL Press.
2008-2015	Representative of ENAC IA and Vice-president at Architectural Council of Switzerland.



Most important grants since 2011

2016-2018 Postdoctoral research: *Housing: Stockholm in the interwar period*. Project 165729 funded by FNS

2014-2018 Doctoral research: *Logement collectif: Vienne et Francfort*. Project 149479 funded by FNS.

2013-2014 Postdoctoral research: *Archaic meditations on architecture: Livio Vacchini at work*. Project 12.248 funded by Sciex-NMS

Innovation, technology transfer & impact on society

September 2018: Exhibition *Housing – Logement collectif*, EPFL.

Main cooperative work / collaborative projects

Itinerant exhibition *Fernand Pouillon*, Università di Napoli, Università di Bologna, Università IUAV di Venezia, ENSA Lyon, ENSA Paris-la Villette, 2018-2019.

Co-organisation of the symposium *Italy and the Nordic Architects*, Accademia di San Luca, Roma, 2013.

Responsible for EPFL Swiss cooperation programme in architecture, 2012-2013.

Key publications since 2011

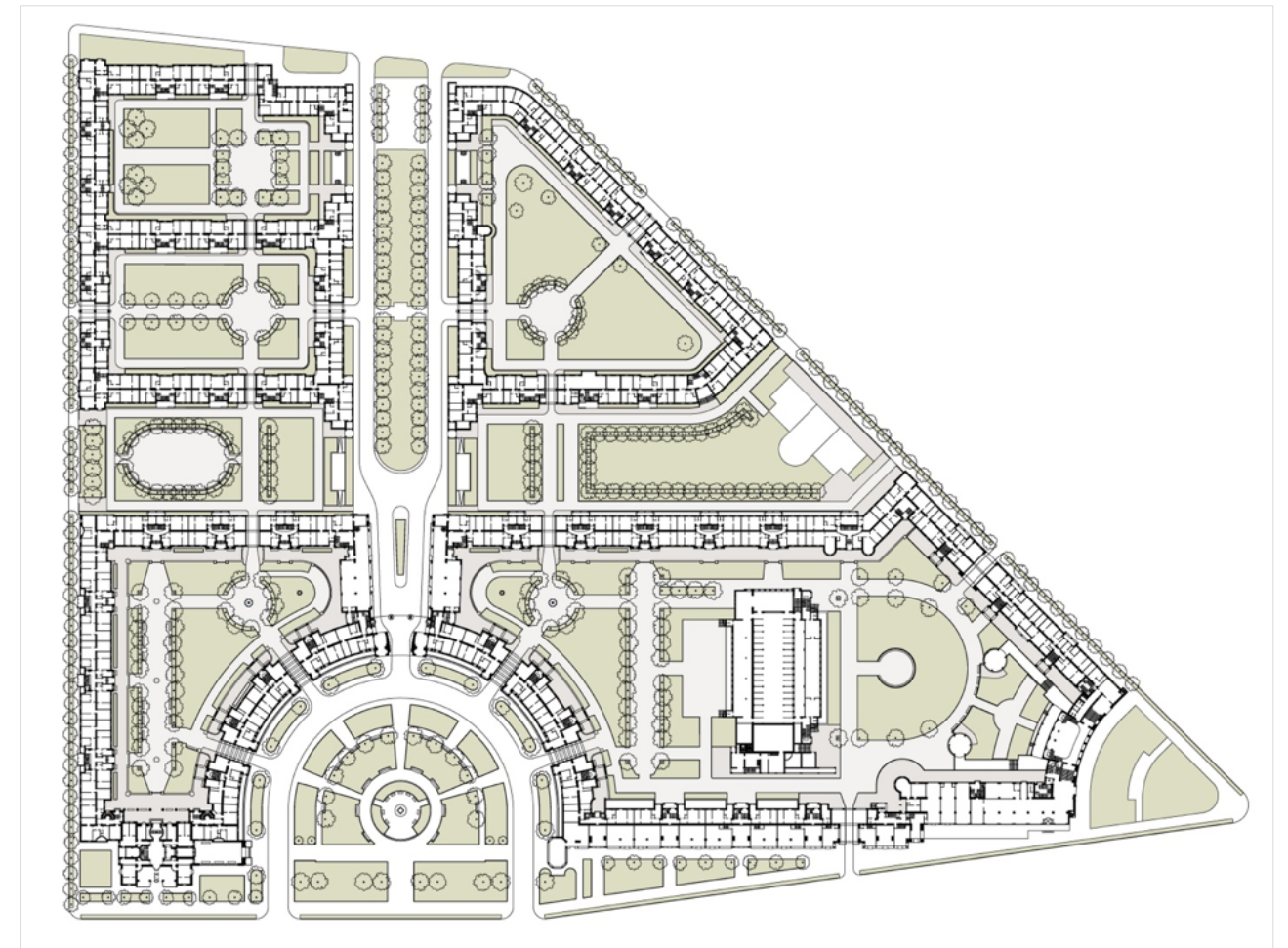
Ortelli, L. (2018) *L'adeguatezza di Asplund*, Siracusa: LetteraVentidue.

Ortelli, L. (2018) 'Stativet och Tumstocken. Un projet de logements d'urgence d'E. G. Asplund', *Matières*, N° 14.

Ortelli, L. (2017) 'La Copenaghen di Kay Fisker', in Cardinale, M. V. and Perego S. (eds), *Tipo Architettura Città. Undici lezioni*. Santarcangelo di Romagna: Maggioli Editore.

Ortelli, L. (2015) 'The Dissolution of Architectonic Space', in Elmlund, P. and Mårtelius, J. (eds) *Swedish Grace. The forgotten modern*, Stockholm: Axel & Margaret Ax Edtions.

Ortelli, L. (2014) 'Relaciones entre historia y proyecto: el alojamiento colectivo de los años 20 y 30', *RA Revista deArquitectura*, N° 16.



Luca Pattaroni

Senior Scientist (MER)
Laboratory of Urban Sociology (LaSUR)

lasur.epfl.ch
Phd in Sociology (Ecole des Hautes Etudes en Sciences Sociales – EHESS, Paris/University of Geneva; *summa cum laude*)
DEA Sciences sociales (1997, Ecole Normale Supérieure – Ulm, Paris; *summa cum laude*)
Licence en Relations Internationales (1996, Graduate Institute of International Studies, Geneva)

Keywords
sociology, ways of life, habitat and housing, urban policies, gentrification, collective action, social and political theory

Career trajectory
2012 to date Senior Scientist at EPFL.
2005-2009 Senior researcher, National Center of Competence in Research North-South (NCCR), FNS.
2004-2012 Post-doc and senior researcher, LaSUR, EPFL.
2003-2004 Visiting scholar, Columbia University, New York, USA.
1998-2003 Research Assistant, Law Faculty, UNIGE.

Research mission & relevance
Luca Pattaroni is leading the research group *City, Habitat and Collective Action* of the LaSUR.
The aim of the group is to analyzes the contemporary diversification of urban experiences and ways of life and its impact on urban dynamics. Confronted with the challenge of increasingly heterogenous and contradictory urban worlds, Luca Pattaroni’s work develop innovative analytical and descriptive tool to develop more hospitable and inclusive cities.
To tackle those questions, it investigates contentious situations (squats, migrations, urban struggles, big events, gentrification) but also institutional innovations especially in habitat and urban policies (cooperative housing, participatory urban planning).

Honors, memberships, scientific community services
2017 to date Editorial board member: *Swiss Journal of Sociology* (since 2017), *Articulo – Journal of Urban Research*.
2007-2013 Co-director, *Espacetemps.net*.
2010-2013 Chief Editor, *Métropolitiques*.
Reviewing activities for Reseach Foundations: SNF, ANR (France), EU Research Programs, SSHRC (Canada), FNRS (Belgique)
2011 Invited Professor, UFF, Rio de Janeiro, Brazil Brésil.
2001-2002 Invited researcher, EHESS (Paris).
2009 APERO Prize of the best scientific paper in urbanism.
2007 1st Prize Communaux d’Ambilly (partnering with Atelier Bonnet).
1st prize, Investor Competition Vernet (Projet Lösinger, Geneva), sociology consultant.



Bibliometric indicators
Google scholar (march 2019): h=15 (g = 26), citations 811
Journal Articles: 29
Book chapters: 33
Books: 5

Most important grants since 2011
Urban (In)hospitality: *What Place for the Precarious Newcomer in the Cities of Geneva and Bruxelles*, SNF (main applicant) *Creative City at Stake: Socio-Spatial Transformations of the Cultural Question in Geneva and Lisbon*, SNF (main applicant)
Urban planning and the heterogeneous city: A study of controversies around the 2014-2034 Mumbai Development Plan, SERI (main applicant)

Innovation, technology transfer & impact on society
Co-founder and President of the Cooperative for creative activities Ressources Urbaines (Geneva).
Appointed Member of the Conseil Consultatif de la Culture (State of Geneva).

Project Augure, Biennale d’architecture et de paysage d’Ile de France (with Post Office Architects).

Main cooperative work / collaborative projects
> Constitution and coordination of a partnership between the Geneva School of Art and Design and The Doctoral School Architecture & Sciences of the City (EDAR) including 5 ph’d’s, a collaborative seminary on the epistemology of Research by the means of art and design, a partnership on a research project on adapting housing to contemporary ways of life, a nominated project for the Biennale of architecture and landscape (Ile de France/Versailles).
> Flash Project Urban planning and the heterogeneous city (2016-2017), Partnership with the School of Habitat (Tata Institute of social studies, Mumbai) for an interdisciplinary research project (architects, social scientists and engineers) A book on *Politics of Planning* is forthcoming Springer).
> Member of the Pilot Committee and social expert of a large applied research on innovative social housing in Geneva including academic partners (Bruno Marchand, EPFL; Philippe Thalmann, EPFL; Frederic Franck, Hepia) and private partners (Jacques Roulet, Peter Zurbruchen, Régie Rosset) that should lead to an actual project of social housing (240 units).

Key publications since 2011
Pattaroni L., Adly H. (2017) ‘An expatriate’s ethnoscape: the impact of the United Nations Office on urban settings and space in Geneva’, *Terceiro Millenio: Revista Critica de Sociologia et Politica*, 6, 1, pp. 117-138.
Pattaroni L. (2016) ‘La trame sociologique de l’espace. Eléments pour une pragmatique de l’espace et du commun’, *Sociologies* [online].
Pattaroni L. (2015) Difference and the Common of the City: The Metamorphosis of the Political from the Urban Struggles of the 1970’s to the Contemporary Urban Order’, in Martin A. and Resende J. (ed.), *The making of the common in social relations*, Cambridge: Cambridge Scholars Publishing.
Cogato Lanza E., Pattaroni L., Piraud M., and Tirone B. (2013) *De la différence urbaine. Le quartier des Grottes/Genève*. Genève: Metispresse.
Pattaroni L., Kaufmann V., and Thomas M.-P. (2012) ‘The dynamics of multi-faceted gentrification. A comparative analysis of the trajectories of six neighbourhoods in the Île-de-France region’, *International Journal of Urban and Regional Research*, 36 (6), pp. 1123-1241.

	Lausanne				Berne			
	Sous-Gare	Bellevaux	Praz Séchaud	Vufflens	Lorraine	Weissenstein	Bümpliz	Moosseedorf
Transports publics	Bus 1, 2, M2 Gare CFF	Bus 3, 8	Bus 6	Gare CFF	Tram 9, 10, 20	Tram 5, 10, 17	Tram 12, 27, gares CFF	Gare CFF
Centre ville	12'	17'	25'	35'	7'	9'	8'	16'
Ecoles	+++	+	-	-	++	+	+++	+
Magasins	+++	+	-	-	+	-	+	+
Gastronomie	+++	+	-	-	+++	+	++	+
Etrangers	29%	40%	34%	13%	25%	19%	25%	16%
Ménages avec enfants	20%	29%	65%	46%	16%	19%	25%	36%
Formations supérieures	28%	12%	16%	19%	23%	20%	9%	7%
Formations inférieures	18%	32%	27%	14%	18%	18%	28%	23%
Vie associative	5 (sport, famille, santé, quartier)	2 (cinéma, loisirs)	2 (sport, solidarité)	4 (famille, environnement)	6 (quartier, famille, solidarité)	2 (quartier)	7 (quartier, famille, loisirs)	2 (sport, famille)
Parcs, nature	++	+	++	+++	-	+	-	+++
Construction <1945	60.0%	54.0%	10.0%	25.0%	79.0%	81.0%	32.0%	21.0%
Construction 1945 - 1970	29.0%	36.0%	18.0%	15.0%	17.0%	15.0%	60.0%	23.0%
Construction >1970	11.0%	10.0%	72.0%	60.0%	4.0%	4.0%	8.0%	56.0%
Typologie architecturale								



Yves Pedrazzini

Senior Scientist (MER) Laboratory of Urban Sociology (LaSUR)

lasur.epfl.ch

PhD in science (1994, EPFL)

M.A. in sociology (1982, University of Lausanne)

Keywords

urban sociology and anthropology, urbanism and urbanization in the South (Latin America, Africa, Asia), culture and arts-de-faire, spatial practices

Career trajectory

2010 to date	Senior scientist in ENAC/EPFL.
1992-2010	Lecturer and researcher, Architecture/EPFL.
1987-1991	Visiting Professor in the Institute of Urbanism, Central University of Venezuela, Caracas (Venezuela).
1983-1987	Researcher in Institute of Built Environment, Architecture Department, EPFL.

Research mission & relevance

As part of LaSUR, Pedrazzini has been studying the transformations of urban spaces for more than 20 years, through the practices of social actors, urban everyday life and “profane” production of space. These themes lead him to take an interest in the “radical realities” of the big cities of the South and in search of “non-compliant” spaces, such as slums, refugee camps, ghettos, developing unique methods. In collaboration with all the ordinary and nonprofessional urbanists. The major scientific breakthroughs resulting from Pedrazzini’s work in Switzerland and the southern countries are as follows:

- > Conceptualization of social urbanism and architecture, in a people-oriented perspective, based on both social and spatial dimensions.
- > Social practices, approached with ethnographic tools.
- Urbanization of the South (special emphasis on the Latin-American metropolis).
- > Self-construction, Slums, Architecture without architecture, Assembly...
- > Refugee Camps and Urbanism of Urgency.

Honors, memberships, scientific community services

Member of the ENAC Faculty Council, since 2010.



Bibliometric indicators

Google Scholar (March. 2019):

h(-index) = 12

g(-index) = 22

citations: 676.

50 peer-reviewed publications

64 book chapters / 20 books

Most important grants since 2011

2016: SNF, Main applicant: *Hybrid Cities: Informal resistance to Violence of Urbanization in China, India and Venezuela*.

2014: SNIS, co-applicant: *Mapping Controversial Memories in The Historical Urban Landscape: A Multidisciplinary Study in Beijing, Mexico City and Rome* – Dr. F. Graezer Bideau, CDH (project director).

2012: SNF grant *Creative Cities at Stake: Socio-spatial transformations of the “cultural question” in Geneva and Lisbon* – Dr. L. Pattaroni, LASUR (main applicant), .

Innovation, technology transfer & impact on society

Designing an *Occupation Program* with Civil Society and Major of Caracas in Venezuela

+ many Participatory researches in Europe, Latin America, Africa and Asia.

Main cooperative work / collaborative projects

All of Pedrazzini’s research project are developed and realized in an International Cooperative work perspective, for exemple:

- > 2019: Grassroot Urbanism: Participatory research with Local NGO and Indigenous Homeless in Quebec; Slums Owners in Mumbai.
- > 2015 to date: Re-Urbanization of Refugee Camps in Lebanon: with Local Stakeholders and Saint-Spirit University of Kaslik, Beirut.
- > 2013 to date: *Architectural and Urbanistic Hybridization in Venezuela*, with Local NGOs and the Major of Caracas.

Key publications since 2011

- Pedrazzini, Y., Vincent-Geslin, S., and Thorer, A. B. (2014) ‘Violence of Urbanization, Poor Neighbourhoods and Large-Scale Projects: Lessons from Addis Ababa, Ethiopia’, *Built Environment*, vol. 40, N° 3 / Autumn, pp. 419-432.
- Pedrazzini, Y. (2014) ‘The Gang of the barrio: Invention and Negative Transnationalization of a Latin American Figure of Urbanity’, in: Irazabal, C. (ed), *Transbordering Latin Americas: Liminal Places, Cultures, and Powers (T)Here*. New York: Routledge, pp. 61-76 [Routledge Research in Transnationalism 28].
- Bolay, J.-C., Pedrazzini, Y., and J. Chenal, J. (eds) (2016) *Learning for the Slums for the Development of Emerging Cities*, Cham: Springer International Publishing.
- Vincent-Geslin, S., Pedrazzini, Y., Adly, H., and Zorro, Y. (eds) (2015) *Translating the City: Interdisciplinarity in urban studies*. Lausanne: EPFL Press, Presses Polytechniques et Universitaires Romandes, 2015.
- Pedrazzini, Y. and Desroziers-Lauzon, G. (2011) ‘Asphalt Bandits: Fear, Insecurity, and Uncertainty in the Latin American City’, in Boudreau, J.-A. (ed), *Urbanity, Fear and Political Action: explorations of intersections, Emotion, Space, Society*, Londres: Elsevier.



Emmanuel Rey

Associate Professor Laboratory of Architecture and Sustainable Technologies (LAST)

last.epfl.ch

PhD (2006, Université Catholique de Louvain, Belgium)
European Postgraduate Degree in Architecture and Sustainable
Development (1999, Université Catholique de Louvain, Belgium - EPFL,
Switzerland - AA London, UK - ENSA Toulouse, France)
Dipl. EPFL in Architecture (1997, EPFL, Switzerland)

Keywords

architectural design, urban design, sustainable architecture, sustainable
neighborhood, brownfield regeneration, energy efficient buildings, low
carbon buildings, sustainable construction technologies

Career trajectory

1997-2000	Architect, MH Concept, Neuchâtel.
1999-2002	Teaching assistant, EPFL.
2000-2003	Head of Bauart Neuchâtel, Bauart Architects and Planners Ltd, Neuchâtel.
2000 to date	Partner, Bauart Architects and Planners Ltd, Bern / Neuchâtel / Zurich.
2010-2017	Tenure Track Assistant Professor, Architecture, EPFL.
2017 to date	Associate Professor, Architecture, EPFL.

Research mission & relevance

Our expertise and contributions focus on the field of sustainable
architecture, with special attention to the transposition of sustainability
principles into the design process - from urban design to construction
components - and to the incorporation of evaluative and innovative criteria
into architectural design.

Our interdisciplinary approaches help build dynamic ties between
engineers and architects. Anchored within the School of Architecture, Civil
and Environmental Engineering (ENAC) and the Institute of Architecture
and the City (IA), the LAST aims to contribute through its interdisciplinary
approaches to the establishment of dynamic links between architects,
engineers and other disciplines.

Honors, memberships, scientific community services

2018 to date	Member of the Scientific Committee of <i>Les Cahiers de la recherche architecturale, urbaine et paysagère</i> , Paris.
2018 to date	Member of the Board of <i>EspaceSuisse</i> .
2018 to date	Member of the Scientific Committee of the MAS in Urbanism UNIGE / EPFL.
2015	Winner of the Swiss-Academies Award for Transdisciplinary Research.
2014-2016	Chair of the Smart Living Building Scientific Committee, EPFL / HEIA-FR / UNIFR.
2014	Nomination for the Roberval Award.



Bibliometric indicators

144 publications, of which 26 peer-
reviewed journal articles, 44 peer-
reviewed conference papers and 55
since 2011

15 edited books, of which 8 as sole
author, 3 as editor and co-author, 4 as
co-author and 14 since 2011

12 invited book chapters, of which 10 as
sole author, 2 as co-author and 10 since
2011

21 invited lectures abroad, of which 14
since 2011

Most important grants since 2011

SIPRIUS - Development of an
operational indicators system for the
integration of sustainability into urban
wasteland regeneration projects (SNF,
2013 - 2017, 331'920.- CHF).

LIVING PERIPHERIES - Multi-
criteria comparative assessment of
transformation strategies for peri-urban
individual houses neighborhoods (SNF,
2014 - 2019, 252'961.- CHF)

ACTIVE INTERFACES - Holistic
operational strategies crossing over the
obstacles for a large-scale advanced
PV integration into urban renewal
processes (SNF - NRP 70, 2014 - 2018,
511'381.- CHF)

Innovation, technology transfer & impact on society

WORKING SPACE, an innovative,
modular and prefabricated timber
construction system adapted to the
vertical extension of existing office
buildings.

Honors, memberships, scientific community services (continued)

2011-2013	Member of the ENAC Research Commission.
2011 to date	Chair of the Ecoparc Forum Committee.
2006 to date	Member of the Technical Executive Committee of of the International Conference on Passive and Low Energy Architecture.

Main cooperative work / collaborative projects

ACTIVE INTERFACES - Holistic operational strategies crossing over the obstacles for a large-scale advanced PV integration
into urban renewal processes, SNF (NRP 70), 2014-2018. Project partners are EPFL (LAST, PV-LAB, LIPID), UNISG, HSLU and
HEIA-FR.

LIVING SHELL - Qualitative densification through roof extension and facade retrofitting, Commission for Technology and
Innovation (CTI), 2013-2015. Project partners are EPFL, HSLU, public and private partners.

SYMBIOTIC DISTRICTS - Innovative design strategies for local energy self-reliance at the district scale by integrating issues
related to buildings, infrastructures, mobility and food, Collaborative Research on Science and Society Program (CROSS),
2013. Project partners are EPFL and UNIL.

Key publications since 2011

Ballif, C., Perret-Aebi L.-E., Lufkin, S., and Rey, E. (2018) 'Integrated thinking for photovoltaics in buildings', *Nature Energy*, 3,
pp. 438-442. <https://www.nature.com/articles/s41560-018-0176-2>

Rey, E., Lufkin, S. (2016) 'Green Density. A Transdisciplinary Research and Teaching Project for the Design of Sustainable
Neighbourhoods', *Gaia-Ecological Perspectives for Science and Society*, 25, 3, pp. 185-190(6). DOI: [10.14512/
gaia.25.3.10](https://doi.org/10.14512/gaia.25.3.10).

Lufkin, S., Rey, E., and Erkman, S. (2016) *Strategies for Symbiotic Urban Neighborhoods*. London: Springer. [https://www.
springer.com/gb/book/9783319256085](https://www.springer.com/gb/book/9783319256085)

Rey, E. (2015) 'Sustainable architecture: towards integrated strategies from urban design to building component', in Khan, A.
Z. and Allacker K. (Eds), *Architecture and Sustainability: Critical perspectives for Integrated Design*. Leuven: ACCO,
pp. 53-58. [https://www.acco.be/en/items/9789462920880/Architecture-and-sustainability--critical-perspectives-
for-integrated-design](https://www.acco.be/en/items/9789462920880/Architecture-and-sustainability--critical-perspectives-for-integrated-design)

Rey, E. (2014) *From Spatial Development to Detail*. Lucerne: Quart Publishers. <http://www.quart.ch/notatio.php?nID=537>



Philippe Thalmann

Associate Professor
Laboratory for Environmental and Urban Economics (LEURE)
leure.epfl.ch

PhD Economics (1990, Harvard University, USA)
MA Economics (1986, University of Lausanne, Switzerland)
BA Economics (1984, University of Lausanne, Switzerland)

Keywords

environmental, climate and energy economics, real estate and housing economics, sustainable development

Career trajectory

2009-2014	Director of Institute of urban and regional sciences and member of the board of ENAC School.
1994 to date	Associate Professor, Department/Institute of Architecture and the city, EPFL.
1993-1994	Assistant Professor SNF, Department of Econometrics and Economics, University of Lausanne.
1990-1994	Lecturer, Department of Economics, University of Geneva.
1988-1990	Assistant, Department of Economics, Harvard University.

Research mission & relevance

LEURE gathers around 10 researchers – economists, mathematicians, political scientists, environmental engineers – who analyze and develop policies designed to better manage our natural and built environment. Particular emphasis is placed on climate policies at the national and international level, which are simulated with large-scale computable general equilibrium models. As buildings and transportation are large emitters of greenhouse gases, those sectors are subject to more detailed modeling and analysis. LEURE is at the forefront of coupling bottom-up modeling of technologies with top-down modeling of markets. It is also at the forefront of real-estate valuation and modelling investment decision of property owners.

Honors, memberships, scientific community services

2015 to date	Chairman of the advisory group to the Federal Statistical Office for the new property price index.
2013 to date	Member of the core evaluation panel of the Swiss Competence Centers for Energy Research (SCCER) (vice-chair since 2017).
2013 to date	Member of the Board of trustees of Publica, the collective pension fund of the Confederation, and vice-chair of its investment committee.
2010-2017	Member of the steering committee of the National research programme NRP 66 <i>Strategies and technologies for the optimal valorisation of wood</i> .



Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?user=8W3tYwEAAAAJ) (Jan. 2019) h = 20, 1427 citations

265 publications, of which 32 peer-reviewed, of which 11 as sole author and 11 since 2011

5 books (2 as sole author), 7 edited books and special journal issues

Most important grants since 2011

Shrinking housing's environmental footprint (SNF, NRP 73)

EUCalc – EU Calculator: Trade-offs and pathways towards sustainable and low carbon European societies (EU, H2020)

Costs of climate change impacts (Federal Office for the Environment)

Innovation, technology transfer & impact on society

Our results on the costs of climate change, the costs of climate change mitigation and the effectiveness of climate policies feeds into Swiss climate policy making and into scenarios for the European energy transition.

Our calculation tools for estimating the costs and benefits of the energy efficiency refurbishment of buildings are used by property owners.

We inform cantonal and national housing policy making.

Honors, memberships, scientific community services (continued)

2009 to date	Member of the advisory committee of the <i>Forum for climate and global change ProClim</i> of the Swiss Academy of Sciences.
2009 to date	Member of the Advisory body on climate changes OcCC for the Federal department for the environment, transports, energy and communications (since 2009)
2008 to date	Chairman of the Swiss federal housing commission.

Main cooperative work / collaborative projects

EU Calculator: Trade-offs and pathways towards sustainable and low carbon European societies (Potsdam Institute for Climate Impact Research, Imperial College London, Climact, The Buildings Performance Institute Europe, ÖGUT, University of Copenhagen, University of East Anglia, TU Delft, Pannon Pro Innovations Ltd, Climate Media Factory, T6 Ecosystems Srl, SEE Change Net)
Enhancing Robustness and Model Integration for the Assessment of Global Environmental change (OPEN University (UK) with the following partners: the University of East Anglia (UK), ORDECSYS consulting (Switzerland), the Potsdam Institute for Climate Studies (Germany), the ENERIS Environment Energy Consultants (Spain), the University of Manchester (UK))
Climate Change Extremes and Adaptation Strategies considering Uncertainty and Federalism (University of Bern, University of Basel, Econability)

Key publications since 2011

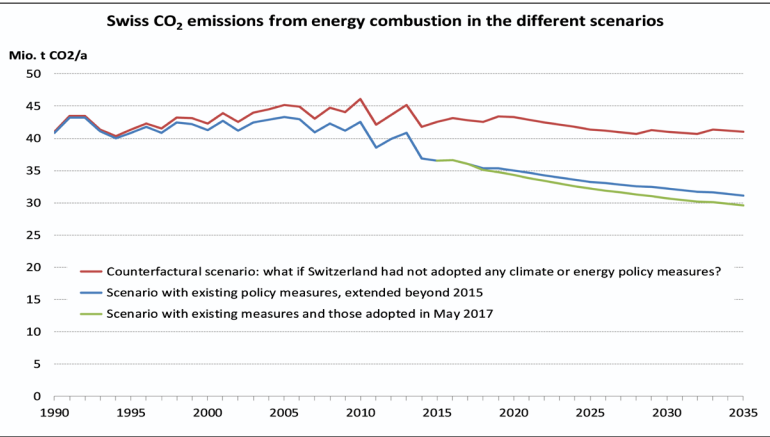
Favarger, P. and Thalmann, P. (2018) *Les Secrets de l'Expertise Immobilière. Prix et Valeur*, 5th edn, Lausanne: Presses Polytechniques et Universitaires Romandes [1st ed 2007].
Vöhringer, F., Vielle, M., Thalmann, P., Frehner, A., Knoke, W., Stocker, D., and Thurm, B. (2018) 'Costs and benefits of climate change in Switzerland'. *Climate Change Economics* [accepted 30.11.2018].

Babonneau, F., Thalmann, P., and Vielle, M. (2016) 'Defining deep decarbonization pathways for Switzerland: an economic evaluation'. *Climate Policy* 18(1), 2018, pp. 1-13 [published online 07 Nov. 2016, doi:10.1080/14693062.2016.1227952].

Doyle, M., Thalmann, P., and Parriaux, A. (2016) 'Underground Potential for Urban Sustainability: Mapping Resources and Their Interactions with the Deep City Method'. *Sustainability* 8(9), 25 August 2016, pp. 830-846 (doi:10.3390/su8090830).

Gonseth, C., Cadot, O., Mathys, N., and Thalman, P. (2015) 'Energy-Tax Changes and Competitiveness: The Role of Adaptive Capacity'. *Energy Economics* 48, March 2015, pp. 127-135 (doi:10.1016/j.eneco.2014.12.010).

Brönnimann, S., Appenzeller, C., Croci-Maspoli, M., Fuhrer, J., Grosjean, M., Hohmann, R., Ingold, K., Knutti, R., Liniger, M.-A., Raible, C. C., Röthlisberger, R., Schär, C., Scherrer, S. C., Strassmann, K., and Thalmann, P. (2014) 'Climate change in Switzerland: A review of physical, institutional and political aspects'. *WIREs Climate Change* 5(4), July/August 2014, pp. 461-481 (doi:10.1002/wcc.280).



Paolo Tombesi

Full Professor

Laboratory of Construction and Architecture (FAR)

far.epfl.ch

PhD Architecture (1997, UCLA, United States)

Bachelor Architecture (1990, Rome La Sapienza, Italy)

Keywords

professional practice, building process, technological innovation, political economy, construction policy, labour resources, research methods, ideal types, regional development, industrial restructuring

Career trajectory

2017 to date	Director, IA ENAC, EPFL.
2016 to date	Full Professor, EPFL.
2016	Visiting Professor, Universidad Catolica de Chile.
2009-2016	Professor and Chair, University of Melbourne.
2009-2013	Visiting Professor, University of Reading.
2005-2009	Associate Professor, University of Melbourne.
2005-2009	Visiting Professor, Politecnico di Torino.
2001-2005	Senior Lecturer, University of Melbourne.
2004	Scholar in Residence, GSD Harvard.
1997-2001	Lecturer, University of Melbourne.

Research mission & relevance

Understood as both an adjective and an acronym (For an Architecture of the Real), FAR defines the activities of a group of researchers interested in the quality of the built world and the role of construction in bringing it about. Utopian in its resolve and pragmatic in its operational tactics, the work of FAR seeks to define material solutions to building environment challenges that are grounded in their historical, social and economic realities. Within FAR, the act of design pervades the entire process of land transformation and delves into the social organization of production. In this context, architecture and construction cannot be separated: FAR is concerned with the construction of efficient architecture, interpreted as a meaningful framework for social activities and a rival investment, as much as it is interested in defining the architecture of construction, e.g., the industrial system that enables spatial ideas to reach sound built fruition.

Honors, memberships, scientific community services

2018	Board member, Swiss Foundation for Architecture, Jury Member, Swiss Architecture Prize.
2002-2016	Editorial board member, Construction Management and Economics, UK.
2010-2012	Inductions to Fellow, Australian Institute of Building, Royal Institution of Chartered Surveyors.
2010	Panel Member, Humanities and Creative Arts (HCA) Research Evaluation Committee, Excellence in Research for Australia (ERA), Australian Research Council.



Bibliometric indicators

Google Scholar (Jan 2019) h = 8

245 citations

144 publications, of which 17 peer-reviewed journal articles, 26 peer-reviewed conference papers, 104 as sole author, and 16 since 2011.

1 edited book in co-authorship, 19 book chapters, of which 8 as sole author and 7 since 2011.

2 special journal issues

39 public lectures abroad

Most important grants since 2011

2018-2019: Watch the space! A preliminary probe into the relationship between building design, product making and product quality in the Jura watchmaking district, w/ SXL, HOBEL, TSAM (ENAC Exploratory Grant, CHF 59,000).

2015-2017: Digital fabrication technologies: Analysing patterns of adoption and innovative transformations in architectural design and practice (Australian Research Council DP110102625, AUD 65,000).

2012-2014: BER CAM model development and analysis, w/ Alliance for Building Excellence - UNSW, UM, QUT, RICS, BCIS, AIQS (Department of Education, Employment & Workplace Relations, Australian Government, University of Melbourne component AUD 290,000).

Honors, memberships, scientific community services (continued)

2007	Research Quality Framework assessment member and expert on Architecture, Department of Education Science and Training, Commonwealth of Australia.
2003-2007	Editorial board member, Journal of Architectural Education, United States.
2005	Department of Environment and Heritage, Australian Government, UNESCO World Heritage Listing nomination consultant, Sydney Opera House.
2005	Sisalation Research Prize, Royal Australian Institute of Architects.

Main cooperative work / collaborative projects

> Superstudio Rapa Nui, environmental design project for Easter Island, 2018-2020, in collaboration with Observatorio Urbano Pontificia Universidad Catolica de Chile, Alcaldia de Hanga Roa, SASIPA, Gobernadorado de Isla de Pascua, Chile.

> Carrying Capacity Predictive Model for Sustainable Management, funded research project in collaboration with Pontificia Universidad Catolica de Chile, Drexel University, Municipalidad de El Quisco, Ministerio del Medio Ambiente Chileno, Subsecretaria de Desarrollo Regional y Administrativo Chileno, Seventh Technological Research Contest 2018 (FONDEF IT18I0028).

> Design of an interdisciplinary research and education concept in ecological habitats, ENAC Exploratory Grant 2018, with EPFL LAB-U and LASUR, in collaboration with MCG-Global Heritage Fund Morocco, ENEC-Sorbonne Université, Haute Ecole Travail Social Geneve.

Key publications since 2011

Tombesi, P. (2016) 'The task of architecture', *The Journal of Architecture*, 21 (4), pp. 493-498.

Tombesi, P. (2016) 'Capital gains and architectural losses: the transformative journey of Caudill Rowlett Scott (1948-1994)', *The Journal of Architecture*, 21 (4), pp. 540-563.

Tombesi, P. (2015) 'More for less - Architectural labour and design productivity', in Deamer, T.(ed) *Architect as Worker*. 1st ed. London: Bloomsbury Academic, pp. 82-102.

Tombesi, P. (2012) 'What do we mean by building design?', in Marble, S. (ed) *Digital Workflows in Architecture: Design - Assembly - Industry*. 1st ed. Berlin: Birkhauser, pp. 184-199.

Tombesi, P. (2012) 'Prometheus unchained: The multiple itineraries of contemporary professional freedom', in Crysler, G., Cairns, S., Heynen, and H., Bozdogan, S. (eds) *The Handbook of Architectural Theory*. 1st ed., London: Sage Publications, pp. 393-409.



Christophe Van Gerrewey

Assistant Professor, Tenure Track
Lab for Architecture, Criticism, History and Theory (Acht)

acht.epfl.ch

PhD in Civil Engineering: Architecture (2005, Ghent University, 2005)

Keywords

criticism, history and theory of architecture (and of literature and the arts), philosophical and cultural views on architecture and the city

Career trajectory

2015 to date	Assistant Professor Tenure Track at EPFL.
2014-2015	postdoc research assistant, Ghent University.
2014	PhD, Civil Engineering: Architecture, Ghent University
2006	MA, Literary Science, KU Leuven.
2005	MSc, Engineering: Architecture, Ghent University.

Research mission & relevance

What distinguishes architecture from building, technology and the exact sciences (and turns it into a form of culture) is language – discourse, text, talking. The main objective of the activities of lab ACHT is developing a comprehensive understanding of contemporary architecture as a cultural discipline in Western Europe. The method of our research is threefold: critical evaluation (criticism of contemporary projects and developments), historical study (history of post-war trends, oeuvres and evolutions) and theoretical investigation (theory of the cultural conditions of architectural production since the late 19th century).

Current research topics are: the critical reception of the work of OMA/Rem Koolhaas (1975-1999), the genesis of the Kunsthal in Rotterdam by OMA/Rem Koolhaas (1987-1992), some architectural writers of the twentieth century, the relationship between architecture and philosophy since the Second World War, and a short history of metropolitan theory in Switzerland.

Honors, memberships, scientific community services

2016	European Union Literature Prize 2016 for the novel <i>Op de hoogte</i> (De Bezige Bij, Amsterdam, 2012).
2016 to date	Member of the editorial board of <i>PostWarHistories</i> . Member of the editorial team of <i>OASE</i> and <i>De Witte Raaf</i> . Visiting critic at the Architectural Association, London.



Bibliometric indicators

24 articles
6 chapters in books
3 edited volumes

Most important grants since 2011

Architectural criticism since 1950 in Belgium and the Netherlands, FWO Flanders, 2011-2015, € 130k.

The Genesis of the Kunsthal in Rotterdam by OMA/Rem Koolhaas, FNS, 2017-2021, CHF 250k.

Main cooperative work / collaborative projects

May 2019: Your PhD or mine? Joint PhD Seminar in Architectural Theory at Ghent University, Department of Architecture and Urban Planning

Edited issues of *OASE* with scholars from TUDelft, Ensap Lille, UAntwerp, ETH Zürich.

Key publications since 2011

Van Gerrewey, C. (ed) (2019 forthcoming) *OMA/Rem Koolhaas: A Critical Anthology from Delirious New York to S,M,L,XL*. Basel: Birkhäuser.

Van Gerrewey, C. (2017) 'War of the Worlds. Zaha Hadid's Port House in Antwerp', *The Architectural Review*, 241, no. 1447, pp. 68-77.

Van Gerrewey, C. (2017) 'Something Completely Different', *E-Flux Architecture*, 15. <https://www.e-flux.com/architecture/history-theory/159239/something-completely-different/>

Van Gerrewey, C. (2016) 'Abandon Your Pencils. The Use and Abuse of Architecture Theory for Life', *Archithese*, no. 2, pp. 33-37.

Van Gerrewey, C. (2015) 'How Soon Is Now? Ten Problems and Paradoxes in the Work of Dogma', *LOG*, no. 35 (2015), pp. 27-47.



Paola Viganò

Full Professor
Laboratory of Urbanism (LAB-U)

lab-u.epfl.ch
PhD in Architectural Composition (1994, IUAV Venice)

Keywords

urbanism, urbanization, environmental design, landscape design, design as knowledge producer, city-territory as renewable resource

Career trajectory

2017	T. Jefferson Visiting Professor, UVA.
2016 to date	Director of Habitat Research Centre, EPFL.
2016	Doctor Honoris Causa, UCL.
2013 to date	Full Professor in Urban Theory and Urban Design, EPFL.
2013	Chaire Francqui, UCL.
2012-2013	Visiting Professor, GSD, Harvard.
2011 to date	Full Professor of Urbanism, IUAV Venice (part-time).
2009-2017	Member of the Atelier International du Grand Paris.
2005-2009	Guest Professor, KU Leuven.
2005	Founding member of the European Postgraduate Master in Urbanism.
2000-2010	Associate Professor IUAV Venice.
1998-2000	Associate Professor of Urbanism, Polytechnic of Bari.
1994	PhD in Architectural Composition, IUAV Venice.

Research mission & relevance

PV's research work lies at the frontier of urban, environmental and landscape design investigating the epistemological value of the project as a research tool. More specifically, it centers on the study of new forms of urbanization, of the different ecological rationalities that structure the same, reformulating the main constituent elements of the contemporary city, their environmental and social sustainability. Lab-U she founded at EPFL explores the possibility of conceiving the city as a renewable resource and the potential of a transformation that invests city and territory at different scales. Its approach intimately relates design to theory, believing in the strong capacity of the design project to produce knowledge. The City-Territory, interpreted as a concrete potential for the construction of a sustainable and innovative urban dimension, is LAB-U's federative research and teaching topic, around which all its initiatives are gathered.



Bibliometric indicators

[Google Scholar](#) (Feb 2019)
h-index = 11, 676 citations
18 books
80 book contributions
12 peer-reviewed journal papers

Most important grants since 2011

Our Common Soil. The Swiss City-Territory as renewable resource (Swiss SNF, 2017-2020).

The Horizontal Metropolis. A Radical Project (Latsis Foundation, 2015; BOZAR Centre for Fine Arts, Brussels Capital region, Atenor, Flemish Ministry of Culture and Febelcem, 2018).

Study of Suzhou Waterfront Urban Design Guidelines (China Architecture Design and Research Group, 2018).

Honors, memberships, scientific community services

2018	Golden Medal of Architecture to the career, Milan Triennale.
2018	Finalist of the Jellicoe International Prize for Landscape architecture.
2017	Ultima Architectuur Prize (two-yearly Flemish Culture Award for Architecture).
2017	Golden Lions of the Lions Club Sondrio Host.
2016	Doctor Honoris Causa at the Université Catholique de Louvain.
2015	First Prize for designing the neighbourhood City of Science in Rome.
2015	Batibouw International Award (Belgium)
2013	Grand Prix de l'Urbanisme, France (first woman and non-French to receive the prize).

Main cooperative work / collaborative projects

2014-2018: *The Horizontal Metropolis. A Radical Project*. Research and Teaching Activities. Partners: Latsis Foundation, Archizoom EPFL, Biennale di Venezia, BOZAR Centre for Fine Arts, Brussels Capital Region, Atenor, Flemish Ministry of Culture, Febelcem, A+ and UCL, UGent, ULB)
2018: *Study of Suzhou Waterfront. Urban Design Guidelines*. Research and Teaching Activities 2018. Partners: China Architecture Design and Research Group, TU Delft, Tianjin University
2018 to date: *Prospective Vision for Greater Geneva*, group leader (as HRC director) Research and Teaching Activities. Partners: UniGe, UCL, Groningen University).

Key publications since 2011

Viganò, P., Barcelloni Corte, M., and Cavalieri, C. (eds) (2018) *The Horizontal Metropolis Between Urbanism and Urbanization*, Zurich: Springer.
Viganò, P., Secchi, B., and Fabian, L. (eds) (2016) *Water and Asphalt. The Project of Isotropy*, Zurich: Park Books.
Viganò, P. (2016) *The Territories of Urbanism. The project as knowledge producer*, Lausanne: EPFL Press.
Viganò, P. (2014) *Territorialism*, Cambridge, MA: Harvard University Graduate School of Design.
Secchi, B. and Viganò, P. (2011) *La ville poreuse. Un projet pour le Grand Paris et la métropole de l'après-Kyoto*, Genève: MétisPresses.



Civil Engineering Institute (IIC)

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Edgard Gnansounou - Bioenergy and Energy Planning (BPE)	76
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Dolaana Khovalyg - Thermal Engineering for the Built Environment Laboratory (TEBEL)	80
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Brice Lecampion - Geo-Energy Lab – Gaznat chair on Geo-Energy (GEL)	84
Pierino Lestuzzi - Applied Computing and Mechanics Laboratory (IMAC)	86
Dusan Licina - Human-Oriented Built Environment Lab (HOBEL)	88
Dimitrios Lignos - Resilient Steel Structures Laboratory (RESSLab)	90
Jean-François Molinari - Computational Mechanics Laboratory (LSMS)	92
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Alexandre Alahi

Assistant Professor Tenure Track Visual Intelligence for Transportation (VITA)

vita.epfl.ch

BA/MS in Electrical & Computer Engineering (2006, EPFL, Switzerland)
Ph.D. in Computer & Communication Science (2011, EPFL, Switzerland)

Keywords

Transportation and Mobility, Socially-aware Artificial Intelligence,
Computer Vision, Machine Learning, Deep Learning, Human-Robot
Interaction, Ambient Intelligence

Career trajectory

2017 to date	Assistant Professor, EPFL, Switzerland Director of the Visual Intelligence for Transportation
2015–2017	Research Scientist at Stanford Artificial Intelligence labs Stanford University, CA, USA Pls: Prof. Fei-Fei Li, Prof. Silvio Savarese
2012–2015	Postdoctoral Fellow at Stanford Artificial Intelligence lab Stanford University, CA, USA Pls: Prof. Fei-Fei Li
2011–2012	Postdoctoral Fellow at EPFL, EPFL Switzerland Advisors: Prof. Pierre Vanderghenst, Prof. M. Kunt
2011–2017	Co-founder VisioSafe SA, Lausanne Ph.D. technology transfer

Research mission & relevance

Our research aims to reshape the future of mobility. We enable machines to perceive the world and make decisions in the context of transportation problems and smart environments. We work on the theoretical challenges and practical applications of socially-aware Artificial Intelligence, i.e., systems equipped with perception and social intelligence. Our research is centered around understanding and predicting human social behavior with multi-modal visual data. We work at the intersection of Computer Vision, Robotics, Signal Processing, Machine Learning (Deep Learning), and Social Sciences, designing future generations of intelligent agents and spaces.

Honors, memberships, scientific community services

2014	SNSF Advanced Researcher Grant Award
2014	LDV Computer Vision Challenge Award, 1st price winner
2014	LDV+AVF startup competition award, 1st price winner
2012	SNSF Early Researcher Grant Award
2012	PTE elevator pitch award
2011	CVPR Best Open Source Award
2011	PhD nominated for EPFL Ph.D. prize, within top 5% in EPFL
2010	Swissnex Boston Global Pitchfest winner
2010	Venture Leaders 2010 winner (Top 20 entrepreneurs of the y.)



Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?user=8YUW8wYAAAAJ) h = 22, 4496 citations (Feb. 2019)

50 peer-reviewed publications
3 book chapters
3 patents

Most important grants since 2011

Automated driving systems (from Honda Research Institute)

Analytics for Autonomous vehicle operations (from Samsung)

NSF eccellenzia and ERC under review

Innovation, technology transfer & impact on society

Pedestrian detection and tracking algorithm transferred to a Startup (used by SBB to justify 800M

infrastructure change)

Style Transfer algorithm used by Facebook

FREAK descriptor used by Google

Honors, memberships, scientific community services (continued)

2009	ICDSC Challenge prize, 1st prize winner to track sport player Memberships, scientific community services
2018 to date	EPFL Media Center scientific advisory board member
2018 to date	EPFL DRIL committee member
2017 to date	EPFL Graduate Student Advisor
2017 to date	Doctoral Program PhD thesis committee
2012 to date	CVPR/ICCV/ECCV top tier conferences reviewer and session chair

Main cooperative work / collaborative projects

ASIMOV: Passing the Asimov test: A first prototype of next-generation socially intelligent robots enabled through an integrative model of human psychology

-> FET proposal under review with 11 European partner

-> The ASIMOV consortium is born as a highly inter-disciplinary unit, integrating technical researchers/SMEs (UPF, UCL, UESSEX, EPFL, UNIGE and ACC), as well as partners from SSH, including philosophers (UTA), psychologists (UNIGE), ethicists (CAPT), social scientists (INESC) and communicators (SCPH)

Key publications since 2011

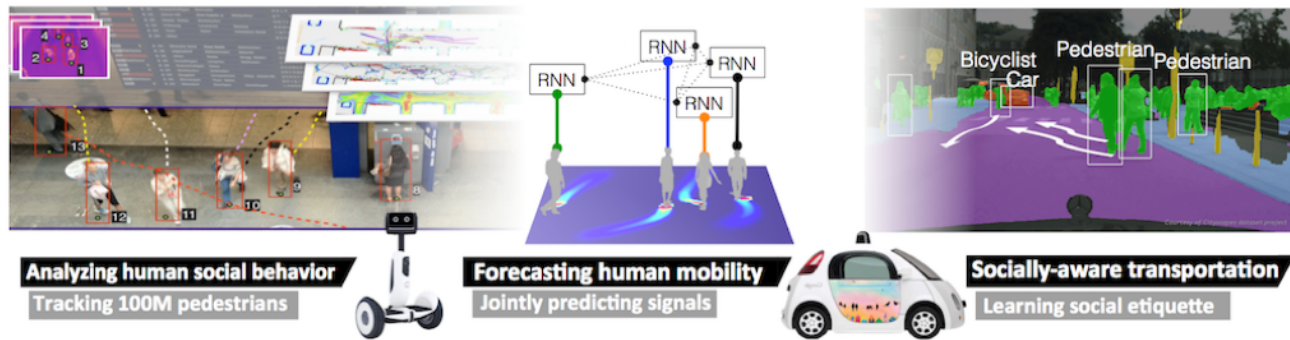
J Johnson, A Alahi, L Fei-Fei, Perceptual losses for real-time style transfer and super-resolution, European Conference on Computer Vision (ECCV), 2016

A Alahi, K Goel, V Ramanathan, A Robicquet, L Fei-Fei, S Savarese, Social Istm: Human trajectory prediction in crowded spaces, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016

A Sadeghian, A Alahi, S Savarese, Tracking the untrackable: Learning to track multiple cues with long-term dependencies, IEEE International Conference on Computer Vision (ICCV), 2017

A Alahi, V Ramanathan, L Fei-Fei, Socially-aware large-scale crowd forecasting, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014

Z Luo, B Peng, DA Huang, A Alahi, L Fei-Fei, Unsupervised Learning of Long-Term Motion Dynamics for Videos, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017



Christophe Ancey

Associate Professor
Environmental Hydraulics Laboratory (LHE)

lhe.epfl.ch
Civil engineer, specialization in hydraulics (1993, INPG, Grenoble)
PhD Mechanics (1997, École Centrale de Paris, France)

Keywords

Geophysical fluid mechanics, Snow avalanches, Hydraulics, Risk management (in mountain areas), Rheology of suspensions, Sediment transport

Career trajectory

1997	creation of Toraval, consulting group (hydraulics and avalanches)
1998-2003	scientist (rheology) at Cemagref, Grenoble
2004-2008	assistant tenure track professor, EPFL
2009 to date	associate Professor, EPFL
1997-2014	consultant for Toraval

Research mission & relevance

My group is a laboratory of geophysical fluid mechanics whose research strives toward a better understanding of hydraulic processes in the environment, with particular emphasis on the problems encountered in the Alps. The field of research includes the following topics: (1) Dynamics of free-surface flows on steep slopes, with the objective of modeling natural hazards induced by water such as mudflows and avalanches. (2) Physics of bed load transport, aiming at better management of sediments in waterways. (3) Hydrodynamics of waterways, with the objective of studying free surface flow to better understand dynamic, transport phenomena within rivers including floods and dambreak waves (in mountain areas). (4) Scientific models and risk management, with the objective of providing decision makers with scientific tools related to land use planning and natural hazard mitigation in mountain areas.

Honors, memberships, scientific community services

2004	Associate editor of Water Resources Research since October.
2016	Associate editor of Journal of Geophysical Research: Earth Surface since January.
2012	Member of the ISTE-Wiley editorial board of the the series “Environmental Engineering” since fall 2012.
1997 to date	Member of Association nationale pour l’étude de la neige et des avalanches.
1998 to date	Society of Rheology.
2001 to date	American Geophysical Union.
2003 to date	International Association of Hydraulic Research.
2004	Swiss Society of Rheology.



Bibliometric indicators

[Google Scholar](#) (January 2019)
h = 39, 4386 citations
h = 30 (Scopus), 29 (Web of Science),
70 peer-reviewed publications
6 books

Most important grants since 2011

“The Stochastic Torrent: stochastic model for bedload transport on steep slope” funed SNSF (Grant No. 200021_160083). 2015-2018

“Experimental investigation into the coupling between particle segregation and flow dynamics in idealized dense granular flows” funded by SNSF (Grant No. 200021_149441). 2013-2017.

“Physics of basal entrainment” funded by SNSF (grant No. 200021_14621). 2012-2016.

Innovation, technology transfer & impact on society

First 2D numerical code for computing avalanches (in the 1990s)

Stochastic sediment transport models

Consulting for engineering companies, local and national authorities with regards to flood and avalanche mitigation

Main cooperative work / collaborative projects

Impulse waves in lakes (Prof. Maurizio Brocchini, Uni. Ancona, Italy)
Particle segregation in granular flow (Prof. Nico Gray, University of Manchester, UK)
Computational hydraulic model and stochastic sediment transport (Prof. Patricio Bohorquez, Uni. Jaén, Spain)

Key publications since 2011

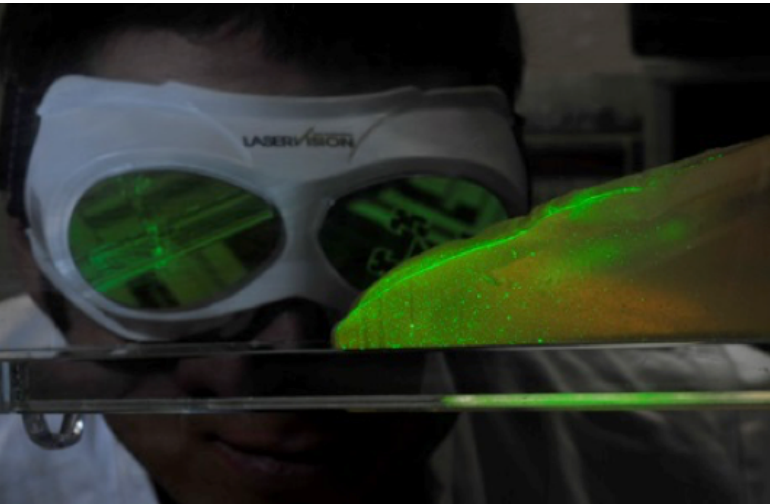
C. Ancey and J. Heyman «microstructural approach to bed load transport: mean behaviour and fluctuations of particle transport rates,» Journal of Fluid Mechanics 744, 129-168, 2014.

C. Ancey, P. Bohorquez and J. Heyman, «Stochastic interpretation of the advection diffusion equation and its relevance to bed load transport,» Journal of Geophysical Researc. Earth Surface 120, 2529-2551, 2015.

P. Bohorquez and C. Ancey, «Stochastic-deterministic modeling of bed load transport in shallow water flow over erodible slope: linear stability analysis and numerical simulation,» Advances in Water Resources 83, 26-54, 2015.

K. van der Vaart, P. Gajjar, G. Epely-Chauvin, N. Andreini, J.M.N.T. Gray, and C. Ancey, An underlying asymmetry within particle-size segregation, Physical Review Letters, 114, 238001, 2015.

B. Dhont and C. Ancey, «Are bedload transport pulses in gravel-bed rivers created by bar migration or sediment waves?,» Geophysical Research Letters 5501-5508, 45, 2018.



Katrin Beyer

Associate Professor Earthquake Engineering and Structural Dynamics Laboratory (EESD)

eesd.epfl.ch

Diploma Civil Engineering (2001, ETH Zurich, Switzerland)

M.Sc. Earthquake Engineering (2005, Roseschool, Pavia, Italy)

PhD Earthquake Engineering (2007, University of Pavia, Italy)

Keywords

Structural Mechanics, assessment of existing structures, seismic engineering

Career trajectory

2001-2003	Structural engineer, Ove Arup & Partners International Ltd, London, UK.
2008-2010	Post-doctoral researcher, ETH Zürich, Switzerland.
2010-2017	Assistant Professor (Tenure Track), IIC , ENAC, EPFL
2017 to date	Associate Professor

Research mission & relevance

Our expertise is in the development of analytical and numerical models for the seismic behaviour of reinforced concrete and unreinforced masonry buildings, focusing in particular on the response of existing structures that were not designed for seismic loads. Striving for a better understanding and improved models, we combine different research approaches such as numerical and mechanical modelling and large-scale testing. Recently, we explore the use of image-based assessment techniques for post-earthquake assessments.

Honors, memberships, scientific community services

2017	Keynote lecture at the 4th International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures
2010	Invited lectures at the Second European Conference on Earthquake Engineering and Seismology
2017	The World Conference on Earthquake Engineering
2018	Member, Editorial Board, Bulletin of Earthquake Engineering (since March)
2018	Member, Editorial Board, Earthquake Spectra (since Jan)
2018	Member, Executive Committee of the European Association for Earthquake Engineering (EAEE, since June).
2010	Member of the teaching body at the IUSS-Roseschool, Pavia, Italy.
2017	Chair, EPFL, Open Science Strategic Committee



Bibliometric indicators

[Google Scholar](#) (March 2019)

h = 20, 1796 citations

62 peer-reviewed publications

[8 open experimental data sets](#)

Most important grants since 2011

[Equivalent frame models for the in-plane and out-of-plane response of unreinforced masonry buildings.](#)
Funder: SNSF

Seismic assessment of stone masonry buildings in Basel; Funder: Canton Basel-Stadt and Federal Office for the Environment (OFEV)

Seismic design and assessment of reinforced concrete core walls – Phase II (<http://p3.snf.ch/project-149907>)

Innovation, technology transfer & impact on society

Organization of a series of very successful [continuing education courses](#) “Seismic assessment of stone masonry buildings”

Second generation of Eurocodes: Member of Project Team 2 and responsible for masonry chapter in the seismic design code EC8-Part 1.

Main cooperative work / collaborative projects

Seismic Testing of Adjacent Interacting Masonry Structures (AIMS), Horizon2020 Project, Co-PIs: Prof. Andrea Penna (U of Pavia), Prof. Christoph Butenweg (RWTH Aachen), Prof. Matthew DeJong (U of Berkeley).

Instability of reinforced concrete walls, various smaller projects, Co-PI: Prof. J Almeida (formerly EPFL, now UC Louvain, Belgium), Prof. C Blandon (School of Engineering of Antioquia, Colombia), Prof. R Bonett Díaz (University of Medellín, Colombia), Prof. C. J Carrillo (Nueva Granada Military University, Colombia), Prof. C Arteta (North University, Colombia)

Seismic assessment of stone masonry buildings in Basel, Co-PIs: Prof. G Magenes & Prof. A Penna (University of Pavia, Italy), Dr. T Wenk (consultant, Switzerland)

Key publications since 2011

Zhang S*, Richart N, Beyer K (2018) Numerical evaluation of test setups for determining the shear strength of masonry, Materials and Structures 51(110). <https://doi.org/10.1617/s11527-018-1236-6>

Outstanding Paper Award by Materials and Structures 2018

Zhang S*, Taheri Mousavi SM, Richart N, Molinari JF, Beyer K (2017) Micro-mechanical finite element modeling of diagonal compression test for historical stone masonry structure, International Journal of Solids and Structures 112:122-132. <http://dx.doi.org/10.1016/j.ijsolstr.2017.02.014>

New modelling technique for stone masonry elements, which opens up opportunities to model such elements with an unprecedented level of detail.

Wilding BV*, Beyer K (2018) Analytical and empirical models for predicting the drift capacity of modern unreinforced masonry walls; Earthquake Engineering & Structural Dynamics. 2018-05-21. Vol. 47, num. 10, p. 2012-2031. <https://doi.org/10.1002/eqe.3053>

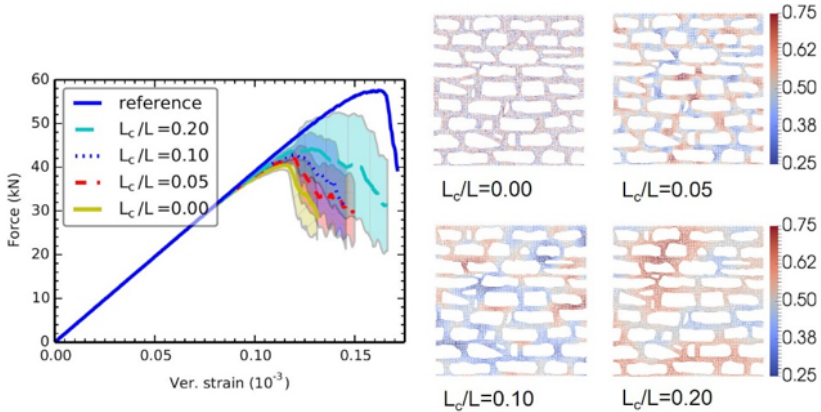
Paper summarizing our research results on 7 years of research on unreinforced masonry walls and basis for many proposals for the masonry chapter of the new Eurocode 8.

Rosso A*, Almeida JP**, Beyer K (2016) Stability of thin reinforced concrete walls under cyclic loads: State-of-the-art and new experimental findings. Bulletin of Earthquake Engineering 14(2): 455-484. <http://dx.doi.org/10.1007/s10518-015-9827-x>

Presentation of first tests on walls that developed out-of-plane failure and for which the entire displacement field was recorded. Tests are used for model validation by various research groups.

Beyer K (2012) Peak and residual strengths of masonry spandrels, Engineering Structures 41: 533-547. <http://dx.doi.org/10.1016/j.engstruct.2012.03.015>

First complete set of masonry spandrel strength models that are the basis for the spandrel models New Zealand Guideline on the Seismic Assessment of Buildings (2014) and in the ASCE 41-17 Standard (2017).



Michel Bierlaire



Full Professor
Transport and Mobility Laboratory (TRANSP-OR)
transp-or.epfl.ch

Cand. Mathematics (1986, University of Namur, Belgium)
Lic. Mathematics (1988, University of Namur, Belgium)
PhD. Mathematics (1996, University of Namur, Belgium)

Keywords

Transportation analysis, operations research, discrete choice models

Career trajectory

1995-1998	Research Associate, Civil Eng., MIT
1998-2006	MER, Institute of Mathematics,EPFL
2006-2012	Assoc. Prof., Civil Eng., EPFL
2012 to date	Full. Prof. Civil Eng., EPFL
2009 to date	Director Transportation Center, EPFL
2009-2017	Director Doctoral Program in Civil and Environmental Engineering
2017 to date	Head of Civil Engineering Institute at EPFL

Research mission & relevance

Our expertise is in the design, development and applications of models and algorithms for the design, analysis and management of transportation systems. The laboratory is particularly active in demand modeling (discrete choice models, estimation of origin-destination matrices), operations research (scheduling, assignment, etc.) and pedestrian flows.

Honors, memberships, scientific community services

2011 to date	Editor-in-Chief, EURO Journal on Transport and Logistics.
2012 to date	Associate Editor, Operations Research.
2007-2017	Associate Editor, Journal of Choice Modelling.
2016 to date	Member of the scientific advisory board, CIRRELT (Interuniversity Research Center on Enterprise Networks, Logistics and Transportation, Québec, Canada.
2009-2016	Member of the Scientific Council, Centre for Transport Studies, KTH Royal Institute of Technology, Sweden.
2015	Founder, European Association for Research in Transportation Member of the International Expert Panel evaluating DTU Transport, Danish Technical University, Lyngby, Denmark.
2012	Chair of the Eric Pas Prize Jury, International Association for Travel Behaviour Research (IATBR).
2012	President of the Jury of the EURO Excellence in Practice Award, Association of European Operational Research Societies.

Bibliometric indicators

[Google Scholar](#) (Feb. 2019) h = 57, 12703 citations

118 peer-reviewed publications (70 since 2011)

4 books

Most important grants since 2011

Incorporating competitor's behavior in demand based optimization models, SNF

Pedflux: pedestrian flow modeling in train stations, Swiss Railways (SBB)

Sustaincity: micro-simulation for the perspective of sustainable cities in Europe (European Commission)

Innovation, technology transfer & impact on society

Optimize educational infrastructure networks im Kazakstan (WorldBank)

MyTOSA 2.0: catanerary-free electric buses. Patent with ABB

Leveraging public and open data for transportation mode detection, Swisscom.

Main cooperative work / collaborative projects

PostcarWorld: a trans-disciplinary multi-dimensional simulation. Project partners are EPFL (Choros, Lasur, CEAT,LCC), ETHZ (IVT), Uni. Svizzera Italiana (IRE)

Sustaincity. Project partners: ETHZ, ENS Cachan (France), INED (France), UCL (Belgium), KUL (Belgium), Stratec (Belgium), NTUA (Greece), TU Berlin (Germany), Bocconi Uni. (Italy), Uni. Cergy-Pontoise (France), UC Berkeley

Short course on Discrete Choice Analysis: Predicting Individual Behavior and Market Demand, with M. Ben-Akiva (MIT), D. McFadden (UC Berkeley and USC, Nobel Laureate 2000), Joan Walker (UC Berkeley).

Key publications since 2011

Markov, I., Bierlaire, M., Cordeau, J., Maknoon, Y., and Varone, S. (2018). A Unified Framework for Rich Routing Problems with Stochastic Demands, Transportation Research Part B: Methodological 114:213-240. [doi:10.1016/j.trb.2018.05.015](#)

Nikolic, M., Bierlaire, M., Farooq, B., and de Lapparent, M. (2016). Probabilistic speed-density relationship for pedestrian traffic, Transportation Research Part B : Methodological 89:58-81. [doi:10.1016/j.trb.2016.04.002](#)

Osorio, C., and Bierlaire, M. (2013). A simulation-based optimization framework for urban transportation problems, Operations Research 61(6):1333-1345. [doi:10.1287/opre.2013.1226](#)

Fosgerau, M., McFadden, D., and Bierlaire, M. (2013). Choice Probability Generating Functions, Journal of Choice Modelling 8:1-18. [doi:10.1016/j.jocm.2013.05.002](#)

Flötteröd, G., and Bierlaire, M. (2013). Metropolis-Hastings sampling of paths, Transportation Research Part B: [Methodological 48:53-66. doi:10.1016/j.trb.2012.11.002](#)



Eugen Brühwiler

Full Professor

Laboratory of Maintenance and Safety of Structures (MCS)

mcs.epfl.ch

MA: Civil Engineering (1983, ETH Zurich, Switzerland)

PhD: Material Science (1988, EPFL Lausanne, Switzerland)



Keywords

Existing civil structures; Fatigue monitoring of bridges; Ultra-high performance fiber reinforced concrete; Composite UHPFRC-RC structures; Enhancement of RC structures; cultural values of bridges.

Career trajectory

1995 to date	Associate/full prof. of structural engineering at EPFL and Head of the Laboratory of Maintenance and Safety of Structures.
1991-1994	Project Manager and structural engineer with the Swiss Federal Railways (SBB), Zurich.
1989-1990	Post-Doc research associate at the Department of Civil Engineering, University of Colorado, Boulder, USA.
1986-1988	Doctoral student at EPFL-LMC (Building Materials). 1984/85: Research engineer/Assistant at EPFL-ICOM (Steel Structures)

Research mission & relevance

The mission of the MCS Laboratory includes the development of rational examination methods for existing structures with the ultimate goal of limiting construction intervention to a strict minimum. If interventions are necessary, their objective must be to improve the structure by using innovative technologies and materials. This goal is in agreement with the principles of sustainable development.

MCS activity aim the development and implementation of:

- examination methods for existing structures based on data measured in-situ on structures (monitoring) to assess fatigue and structural safety, considering life cycle approaches.
- engineering methods and technologies using UHPFRC to enhance existing reinforced concrete structures including both material and structural aspects.
- aspects of risks, cultural values and user's needs in sustainable maintenance strategies for existing structures.

Honors, memberships, scientific community services

Best teacher award 2018 , Civil Engineering Section (SGC)

Federal expert for heritage structures in Switzerland (since 2004)

Member of numerous International Scientific Committees; Editorial Board member of SIE (Structure and Infrastructure Engineering) Journal; best paper/lecture awards

Member of Core Group of Technical Committee of IABSE (International Association of Bridge and Structural Engineering), member of code committees.

Bibliometric indicators

Google Scholar (Jan. 2019):

h = 30, i10: 66

3'532 citations

87 peer-reviewed journal papers

1 book; books as co-editor

Most important grants since 2011

European Research & Training Project INFRASTAR (H2020-MSCA-ITN-2015): "Innovation and Networking for Fatigue and Reliability Analysis of Structures - Training for Assessment of Risk", (2016-2019)

SNSF Project "Tensile response and microstructure development of SCM based SH-UHPFRC", (2015-2019)

SNSF NRP70 Energy Turnaround – "Concrete Solutions: Next generation UHPFRC for a sustainable built environment", (2015-2019)

Innovation, technology transfer & impact on society

UHPFRC Technology to enhance existing RC structures (bridges and buildings), numerous applications in Switzerland and first applications in Japan, China and US.

Several applications of monitoring of bridges to realistically assess the structural performance.

Soft/smart interventions on numerous structures of high cultural values using new technologies and improved structural engineering methods.

Main cooperative work / collaborative projects

European Research & Training Project INFRASTAR (H2020-MSCA-ITN-2015): "Innovation and Networking for Fatigue and Reliability Analysis of Structures - Training for Assessment of Risk", (2016-2019), Collaboration with Iffstar France (Nantes, Paris), U Aalborg Denmark, BAM Berlin Germany, industrial partners.

SNSF NRP70 Energy Turnaround – "Concrete Solutions: Next generation UHPFRC for a sustainable built environment", (2015-2019), Collaboration with ETH Zurich and EMPA.

EUROTECH Wind turbines: Monitoring and fatigue of WT towers, (2013-2017), Collaboration with DTU Denmark, TU München Germany, U Eindhoven The Netherlands and WIRE-SIE-EPFL.

Key publications since 2011

Sadouki, H., Denarié, E., Brühwiler, E., Validation of a FEA Model of Structural Response of RC-Cantilever Beams Strengthened with a (R-) UHPFRC layer, Journal of Construction & Building Materials, 140 (2017), 100-108.

Bastien-Masse, M., Denarié, E., Brühwiler, E., Effect of fiber orientation on the in-plane tensile response of UHPFRC reinforcement layers, Cement and Concrete Composites 67, 2016, pp.111-125.

Grigoriou, V., Brühwiler, E., Monitoring-based safety verification at the Ultimate Limit State of fracture of the RC slab of a short span railway underpass, Journal of Structural Safety, Vol. 60, 2016, pp. 16-27.

Treacy, M., Brühwiler, E., A direct monitoring approach for the fatigue safety verification of construction joint details in an existing post-tensioned concrete box-girder bridge, Engineering Structures 88 (2015), pp. 189-202.

Brühwiler E, Denarié E. Rehabilitation and Strengthening of Concrete Structures Using Ultra-High Performance Fibre Reinforced Concrete. Structural Engineering International. 2013; 23(4):450-7.



Emmanuel Denarié

Senior Scientist (MER) Laboratory of Maintenance and Safety of Structures (MCS)

mcs.epfl.ch

MA: Civil Engineering (1986, EPFL Lausanne, Switzerland)

PhD: Material Science (2000, EPFL Lausanne, Switzerland)

Keywords

Ultra-High-Performance Fiber Reinforced Concrete (UHPFRC), Time Dependent Response, Cementitious Materials, Rehabilitation, Bridges, Lighthouses, Life Cycle Analysis

Career trajectory

2000 to date	Senior scientist, lecturer at the Laboratory of Maintenance and Safety of Structures, MCS-EPFL.
1993-2000	Research associate at LMC-EPFL (Building Materials), head of testing activities and PhD student from 1996 to 1999.
1990-1993	Project manager and structural engineer at R. Andenmatten & KBM AG, Viège (CH).
1988-1990	Research associate at IBWK-ETHZ (Building Materials).
1987-1988	Research associate at LMC-EPFL (Building Materials).

Research mission & relevance

My basic approach is the one followed at MCS: to bring material and structural engineering sciences together for efficient and sustainable management of existing structures.

My group focuses on three main domains:

- Early age and long-time response of UHPFRC under thermo-mechanical loading.
 - Development of innovative UHPFRC mixes with low clinker matrices and optimized fibrous mixes (steel and synthetic fibers).
 - Effect of damage on water transport in UHPFRC under high stresses.
- Basic fields addressed are: time dependent response of cementitious composites and couplings with fracture, rheology, kinetics of hydration, powder technology, in relation to structural response in composite UHPFRC/RC members.

A strong and constant interaction with practice helps a fast and efficient technology transfer with high societal impact.

Honors, memberships, scientific community services

Member of numerous international scientific committees.

Member of scientific (RILEM and FIB) and code (SIA) committees.

Reviewer for the following journals: Cement and Concrete Research, Cement and Concrete Composites, Materials and Structures, Construction and Building Materials, Journal of Advanced Concrete Technology, KSCE Journal of Civil Engineering, Engineering Fracture Mechanics, ASCE Bridge Engineering.

Review panel of scientific projects in France and Austria



Bibliometric indicators

SCI/Scopus (Feb. 2019)

h = 15/15, 760/671 citations

Google Scholar (Feb. 2019)

h = 24, i10: 43, 1'944 citations

37 peer-reviewed journal papers

74 conference papers

1 book (monograph) in preparation

Most important grants since 2011

2015-2019: Tensile response of Eco-Strain Hardening Ultra High Performance Fiber Reinforced Concretes under low temperatures and low loading rates, funded by Swiss National Science Foundation

2015-2019: Next generation UHPFRC for a sustainable built environment, NRP70 Energy Turnaround, funded by Swiss National Science Foundation

2012-2014: R'Equip Electromechanical testing system with temperature chamber, funded by Swiss National Science Foundation

Innovation, technology transfer & impact on society

First cast-on site applications of UHPFRC for reinforcement of existing structures in Switzerland, Slovenia and France (lighthouses). Numerous projects in Switzerland – high impact on society.

Development and application of UHPFRC mixes (incl. one patent application): first thixotropic mix for application on slopes, first low clinker mix with synthetic fibers for structural use – high impact on society.

Honors, memberships, scientific community services (continued)

Member of the Jury of 11 theses abroad and in Switzerland.

Doctoral class «New concretes for Structures» (EDCE/EPFL) for civil engineering and materials students – given yearly since 2011

Main cooperative work / collaborative projects

Development and industrial application of thixotropic UHPFRC mixes for application on road bridges in Switzerland, collaboration with Road authorities Swiss Cantons Vaud and Geneva, 2010-2011. Realization of a movie – DVD on the application in Geneva.

Supervision of first cast-on site application of UHPFRC for reinforcement of an offshore marine signalization structure in 2013, collaboration with CEREMA (Brest) and Lafarge (France).

SNSF NRP70 Energy Turnaround – “Concrete Solutions», WP leader project: «Next generation UHPFRC for a sustainable built environment”, (2015-2019), development of low embodied energy, structural UHPFRC with synthetic fibers.

Collaboration with ETH Zurich, Sika (CH), Dyneema (NL), OMYA (CH).

Member (MCS) of the group of coordination of structural testing labs, EPFL/ENAC/IIC/GIS since 2000, head of the group from 2012 to 2017.

Key publications since 2011

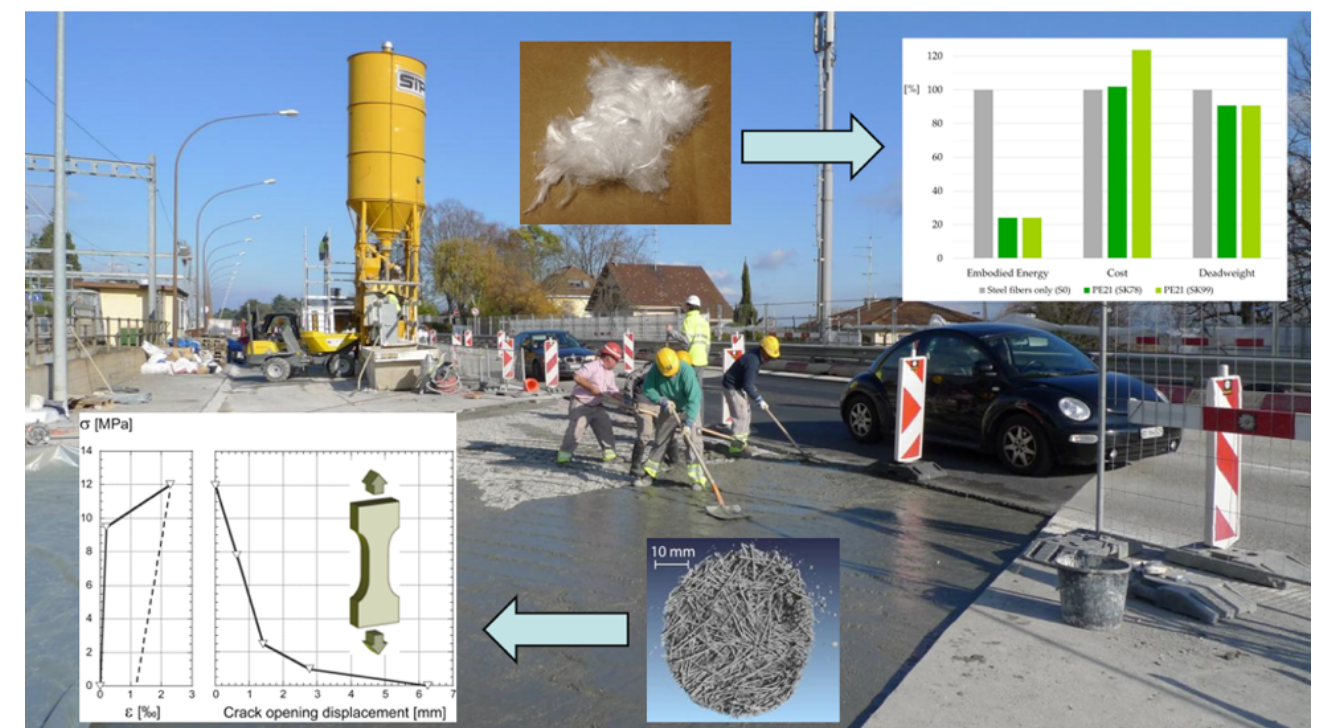
Sadouki, H., Denarié, E., Brühwiler, E., Validation of a FEA Model of Structural Response of RC-Cantilever Beams Strengthened with a (R-) UHPFRC layer, Construction and Building Materials 140, 2017, 100-108.

Switek-Rey A., Denarié E., Brühwiler E., Early Age Creep and Relaxation of UHPFRC under Low to High Tensile Stresses, Cement and Concrete Research 83, 2016, 57-69.

Bastien-Masse, M., Denarié, E., Brühwiler, E., Effect of fiber orientation on the in-plane tensile response of UHPFRC reinforcement layers, Cement and Concrete Composites 67, 2016, 111-125.

Habert, G., Denarié, E., Šajna, A., Rossi, P., Lowering the global warming impact of bridge rehabilitations by using Ultra High-Performance Fiber Reinforced Concretes, Cement and Concrete Composites 38, 2013, 1-11.

Brühwiler E, Denarié E., Rehabilitation and Strengthening of Concrete Structures using Ultra-High-Performance Fiber Reinforced Concrete, Structural Engineering International 23(4), 2013, 450-457.



Miguel Fernández Ruiz



Senior Scientist (MER)
Structural Concrete Laboratory (IBETON)

ibeton.epfl.ch
MSc Civil Engineering, 1st national award (2001, Polit. Univ. Madrid, Spain)
PhD cum laude Civil Engineering (2004, Polit. Univ. Madrid, Spain)

Keywords
Concrete structures, design, structural performance, innovative construction materials

Career trajectory	
Academia	
2001-2004	Polit. Univ. Madrid (UPM, Spain). PhD researcher
2004-2014	EPFL. Research and Teaching associate
2014-2019	EPFL. Senior Scientist (MER, currently at 70%)
2015	Accredited as Adjunct Professor in Spain (ANECA)
2015-2016	Polit. Univ. Catalonia (UPC, Spain). Invited professor
2018	Tech. Univ. Denmark (DTU). Invited professor (07 08.2018)
2019	Accredited as Full Professor in Spain (ANECA)
Professional	
2001-2004	Structural engineer, MC2/Proes, Madrid (Spain)
2007-2019	Founder and partner of “Muttoni & Fernández, ingénieurs conseils SA”, Ecublens (currently at 30%)

Research mission & relevance
With a clear focus to research on topics with practical relevance for society, the investigations performed show the significance of a sound theoretical approach combined with refined experimental techniques. Active in the domain of structural engineering and in particular in concrete and composite structures, the results of the researches performed have been selected as the most advanced state-of-the-art models in a number of domains and incorporated in national and international design codes.

Honors, memberships, scientific community services	
2015-2018	Technical Secretary of Project Team CEN/TC 250/SC 2 (Eurocode 2)
2018 to date	Editorial Advisory Board of the journal “Structural Concrete”, journal of the Structural Concrete Federation, ed. by Wiley
2014 to date	Scientific comitee of journal ‘Hormigón y Acero’, edited by ACHE (Asociación Científico-Técnica del Hormigón Estructural), Spain WP SIA 262-fire (Swiss Code for Structural Concrete - Fire) of SIA (Swiss Society of Engineers and Architects), Switzerland

Bibliometric indicators
[Google Scholar](https://scholar.google.com/citations?hl=fr&user=93333333333333333333) (Jan. 2019) h-index = 28 (2346 citations)
[Scopus](https://scopus.com/authors/details/miguel-fernandez-ruiz) (peer-reviewed profile, Jan. 2019) h-index = 22 (1270 citations)
92 peer-reviewed scientific papers
Author of one book, 3 course notes and editor of one Conf. Proc.

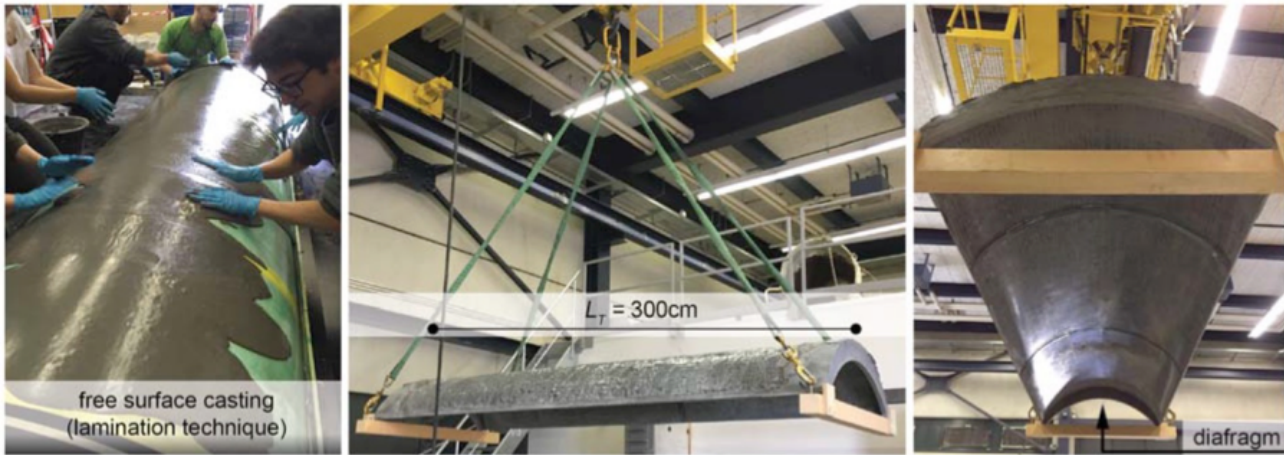
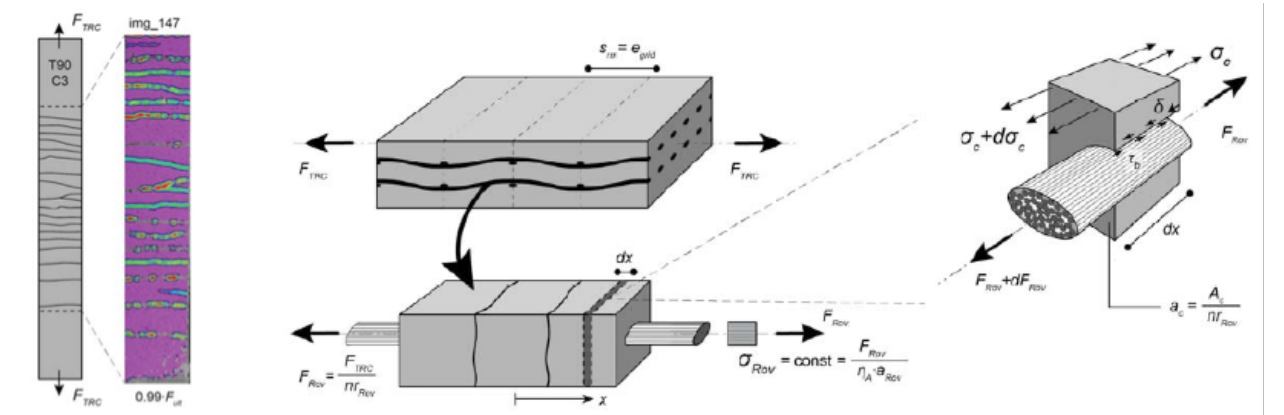
Most important grants since 2011
Design of Textile Reinforced Concrete, Ass. Swiss Cement Ind.
Structural concrete detailing, Swiss Fed. Road Adm.

Fundamentals of shear transfer, SNF

Innovation, technology transfer & impact on society
Member of national and international code committees (Eurocode, Model Code, Swiss codes SIA)
Holder of five patents
Developer of open source code applets for design and teaching of structural concrete response (teaching platform i-concrete.epfl.ch)

Main cooperative work / collaborative projects
Eurocode 2 – European code for design of concrete structures (technical secretary of Project Team 1)
Research project “Structural Response for Seismic European Design”, funded by the Seismology and Earthquake Engineering Research Alliance for Europe, Project #2017-2 (Poli. Milan (Italy)+ EPFL+ Un Nova (Portugal) + Un. Bucarest (Romania)
WP 2.2.3 and 2.2.4 of Structural Concrete Federation (43 countries) working for next generation of Model Code for Concrete Structures in the chapters of shear and punching shear in slabs and strut-and-tie modelling

Key publications since 2011
Campana, S., Fernández Ruiz, M., Anastasi, A., Muttoni, A., Analysis of shear-transfer actions on one-way RC members based on measured cracking pattern and failure kinematics, Magazine of Concrete Research, Thomas Telford Publishing Ltd., London, Vol. 65, No. 6, 2013, pp. 386–404
Fernández Ruiz, M., Muttoni, A., Sagaseta, J., Shear strength of concrete members without transverse reinforcement: a mechanical approach to consistently account for size and strain effects, Engineering Structures, Elsevier, Vol. 99, 2015, pp. 360–372
Cavagnis, F., Fernández Ruiz, M., Muttoni, A., Shear failures in reinforced concrete members without transverse reinforcement: a critical analysis on the basis of test results, Engineering Structures, Elsevier, Vol. 103, 2015, pp. 157–173
Muttoni, A., Fernández Ruiz, M., Niketic, F., Design versus assessment of concrete structures using stress fields and strut-and-tie models, American Concrete Institute, Structural Journal, Vol. 112, No. 5, 2015, pp. 605–615
Tasevski, D., Fernández Ruiz, M., Muttoni, A., Compressive strength and deformation capacity of concrete under sustained loading and low stress rates, Journal of Advanced Concrete Technology, Japan Concrete Institute, Japan, Vol. 16, 2018, pp. 496–415



Nikolas Geroliminis

Associate Professor Urban Transport Systems Laboratory (LUTS)

luts.epfl.ch

Diploma, 2003, Civil Engin., National Technical Un of Athens, Greece
M.S., 2004, Civil and Environmental Engin., Un of California Berkeley
Ph.D., 2007, Civil and Environmental Engin., Un of California Berkeley

Keywords

Urban Transportation, Modeling and Control of Urban Transport Systems, Traffic Flow Theory, Networks, Multi-modal Urban Systems, On-demand transportation, Optimization

Career trajectory

2015	Associate Professor, EPFL. Director of Urban Transport Systems Lab.
2009-2015	Assistant Professor, EPFL. Director of Urban Transport Systems Lab.
2009-2014	Adjunct Assistant Professor, Department of Civil Engineering, Un. of Minnesota
2007-2009	Assistant Professor, Department of Civil Engineering, Un. of Minnesota
2003-2007	Graduate Student Researcher, Institute of Transport Studies, U of California, Berkeley

Research mission & relevance

Our work aims to investigate where the collective traffic flow dynamics of sub-networks capture the main characteristics of traffic congestion, and its propagation over time and space. This framework is utilized to introduce elegant effective control strategies to improve mobility and in large urban networks that local ones are unable to succeed. The methodology integrates network level physical models with advanced clustering algorithms and proper control theory. We develop optimization tools and investigate what type of real-time active traffic management schemes (congestion pricing, vehicle restriction, large scale traffic signal control, optimization of on-demand services) can improve mobility measures for cities of different structures.

Honors, memberships, scientific community services

Visiting Professor (UIUC - Fall 2017), University of Sydney (Spring 2018), University of Technion (Spring 2018)
EURO Award for Best EJOR Paper (European Journal of Operations Research) on Innovative Applications of OR (2017)
Best Dissertation award for PhD Student Mohsen Ramezani, First prize award from IEEE ITS Society (2015)
15 journal papers at the top 1% of citations compared with papers published in similar discipline and age (Scopus)
Associate Editor: Transportation Science (2016-), IEEE Transactions on ITS (2016-), Transp Research part C (2015-)
Member of International Advisory Council (IAC) of ISTTT (International Symposium on Transp and Traffic Theory)



Bibliometric indicators

Google Scholar: Citations: 6500
h-index: 41
Scopus: Citations: 3600
h-index: 32
Refereed Journal Publications (65)
Journal Publications with my PhD Students and Postdocs (45)
Refereed conference proceedings (~100)

Most important grants since 2011

Modeling and controlling traffic congestion and propagation in large-scale urban multimodal networks, ERC

Route Choice and Perimeter Control for Heterogeneous Congested net-works with parsimonious models, SNF

Innovative fleet management algorithms for planning and operation of autonomous vehicles, Innosuisse (CTI)

Innovation, technology transfer & impact on society

Implementation of algorithms for rebalancing of car-sharing systems in the city of Grenoble

A zone-based mobility analysis with GSM traces, Swisscom

Development of MOOC Course Intro to Traffic Flow Modeling and Intelligent Transport Systems (EdX Platform)

Honors, memberships, scientific community services (continued)

Chair of Steering Committee of hEART (European Association for Research in Transportation)
4 PhD students and 5 PostDocs have obtained faculty positions

Main cooperative work / collaborative projects

Innovative fleet management algorithms for planning and operation of autonomous vehicles, Swiss Innovation Agency (collaboration with Start-up company BestMile)
Relocation strategies for one-way car sharing systems in Grenoble (collaboration with TOYOTA Japan)
Transportation and education in KNUST university in Ghana (collaboration with KNUST and Prof. Bierlaire EPFL)

Key publications since 2011

Il Sirmatel, N Geroliminis, 2018. Mixed logical dynamical modeling and hybrid model predictive control of public transport operations, Transportation Research Part B: Methodological 114, 325-345
W. Liu; N. Geroliminis, 2017. Doubly dynamics for multi-modal networks with park-and-ride and adaptive pricing; Transportation Research Part B: Methodological. vol. 102, p. 162-179
M. Saeedmanesh and N. Geroliminis 2016. Clustering of heterogeneous networks with directional flows based on “Snake” similarities, in Transportation Research Part B Methodological, vol. 91, p. 250-269
B. Boyaci, K. Zografos and N. Geroliminis, 2015. An optimization framework for the development of efficient one-way car-sharing systems, in European Journal of Operational Research, vol. 240, num. 3, p. 718-733.
M. Ramezani Ghalenoei, J. Haddad and N. Geroliminis 2015. Dynamics of heterogeneity in urban networks: aggregated traffic modeling and hierarchical control, in Transportation Research Part B: Methodological, vol. 74, p. 1-19.



Edgard Gnansounou

Professor titular Bioenergy and Energy Planning (BPE)

bpe.epfl.ch

MSc Civil Engineering (16 January 1983, EPFL)
PhD Energy Systems (20 December 1990, EPFL)

Keywords

Energy Security, Demand-Supply adequacy, Renewable energy, Bio-based products , Sustainability assessment, Greenhouse gas emissions, Life Cycle Assessment, Sustainable Construction, energy planning

Career trajectory

1983-2003	Teaching and Research Assistant, EPFL
2002	Visiting researcher at the Thayer College, Dartmouth School of Engineering with Professor Charles Wyman (USA)
2003-2009	Director of the Laboratory of Energy Systems (EPFL-LASEN)
2006	Senior Researcher (MER), EPFL
2008	Visiting researcher at Polytech of Clermont-Ferrand, University Blaise Pascal, with Prof. Christian Larroche
2009 to date	Head of the Bioenergy and Energy Planning (BPE)
2009	Visiting researcher at the Biotechnology Division of National Institute for Interdisciplinary Science and Technology (NIIST), Trivandrum, India, with Prof. Ashok Pandey
2011 to date	Professor titular, EPFL

Research mission & relevance

The activities of the Bioenergy and Energy Planning (BPE) aim at assessing the wide scale integration of renewable energy into existing systems dominated by fossil energy. Our research works contribute to the development of integrated models for assessing the sustainability of energy systems, including techno-economic, environmental and social dimensions. Typical research issues of the BPE Group are energy security, multi-agent simulation of electricity market, electricity demand/supply adequacy, techno-economic and environmental assessment of second generation bioethanol and other bio-products. Experimental works at bench scale are undertaken as well. Our teaching activities include several courses on energy planning at bachelor, master and doctoral school using Problem and Project Based Learning pedagogy. We have also developed a teaching cooperation with Industry on Sustainable Construction.

Honors, memberships, scientific community services

Editorial Board member, Bioresource Technology (Elsevier)
Editorial Board member of the Journal of Energy and Environmental Sustainability
Associate Editor of the Energy Strategy Reviews (Elsevier)
Reviewer for 20 journals incl. :Bioresource Technology, energy policy, Environmental Science Technology, International Journal of Industrial



Bibliometric indicators

[Google Scholar](#) (Feb. 2019) h = 27,
3605 citations
i10 = 46
153 publications including 77 papers in peer-reviewed journals
6 books

Most important grants since 2011

Biorefineries from oil palm in Brazil (Industry, and Swiss Federal Office of Education, Interdisciplinary, 2011-18)

Integration of Biology and Engineering into an Economical and Energy Efficient 2G Bioethanol, Biorefinery (PROETHANOL2G) (EC FP7, Interdisciplinary, 2011-14)

Utilising agricultural residues from sugarcane harvesting for the production of bio-energy and chemicals in a biorefinery in South Africa (ENERCHEMS) (SNF, 2014-17)

Innovation, technology transfer & impact on society

Development of a system of indicators and a methodology to assess energy security of industrialized countries (Transfer to the World Energy Council in 2012)

Development of the Planelec-pro software for least cost planning of Power Generating Systems and transfer to the West Africa Power Pool - WAPP (14 countries)

Honors, memberships, scientific community services (continued)

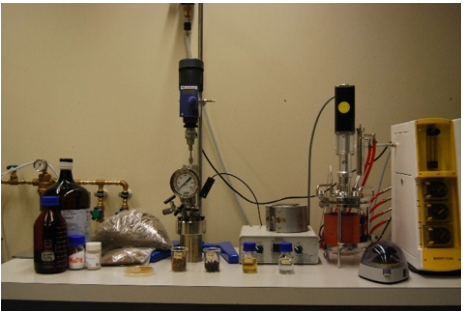
Ecology, Process Biochemistry, Biotechnology for biofuels
Reviewer of research projects for French renewable energy agency (ADEME)
Reviewer of Ecobalance Conference paper (Japan)

Main cooperative work / collaborative projects

Collaboration on 2nd Generation Bioethanol Production within the FP7 Europe-Brazil granted project. The consortium included 8 European partners and 5 Brazilian partners (2010-14)
Collaboration with two Brazilian Universities for assessing the sustainability of oil-Palm based biorefinery in the Brazilian context within a Swiss-Brazilian and Industry funded project (2012-2018)
Collaboration with a South African (SA) University and the SA Industry of sugarcane in the framework of a Swiss-South African funded project on conversion of sugarcane bagasse into bioenergy and chemicals (2014-2017)

Key publications since 2011

E. Gnansounou. Coproducts performances in biorefineries: Development of Claiming-based allocation models for environmental policy. Bioresource Technology, 254, 31-39, 2018. <https://doi.org/10.1016/j.biortech.2018.01.052>
E. Gnansounou, J.K. Raman. Environmental performances of coproducts. Application of Claiming-Based Allocation models to straw and vetiver biorefineries in an Indian context. Bioresource technology, 262, 203-211.2018 <https://doi.org/10.1016/j.biortech.2018.04.090>
E.R. Pachón, P. Vaskan, J.K. Raman, E. Gnansounou. Transition of a South African sugar mill towards a biorefinery. A feasibility assessment. Applied Energy. 229, 1-7.2018. <https://doi.org/10.1016/j.apenergy.2018.07.104>
P. Vaskan, E. R. Pachón, E. Gnansounou. Techno-economic and life-cycle assessments of biorefineries based on palm empty fruit bunches in Brazil. Journal of Cleaner Production, 172, 3655-3668, 2018. <https://doi.org/10.1016/j.jclepro.2017.07.218>
[E. Gnansounou, C. M. Alves, E. R. Pachon, P. Vaskan](#). Comparative assessment of selected sugarcane biorefinery-centered systems in Brazil: A multi-criteria method based on sustainability indicators. Bioresource Technology, 243, 600-610, 2017. <https://doi.org/10.1016/j.biortech.2017.07.004>



Thomas Keller

Full Professor Composite Construction Laboratory (CCLab)

cclab.epfl.ch

Dr. sc. techn. (PhD), 1992,
Swiss Federal Institute of Technology Zurich, ETH
Dipl. Bauing. ETH (MSc) civil engineering, 1983,
Swiss Federal Institute of Technology Zurich, ETH

Keywords

Structural engineering; advanced composite materials and structures;
sandwich structures; adhesive bonding

Career trajectory

2007 to date	full prof. of structural engineering EPFL
1998-2007	associate prof. of structural engineering EPFL (80/100%)
1996-1998	assistant prof. of structural engineering (50%) Swiss Federal Institute of Technology, Zurich (ETH)
1992-2004	joint owner engineering offices in Zug and Zurich
1990-1992	research scientist (PhD) Swiss Federal Institute of Technology, Zurich (ETH)
1986-1990	project engineer Architecture and engineering office Calatrava, Zurich
1983-1986	teaching and research assistant Swiss Federal Institute of Technology, Zurich (ETH)

Research mission & relevance

CCLab's research mission is to make a significant contribution to the development of a new generation of innovative high-performance infrastructure systems. Research interests focus on composite or hybrid solutions on the material, component and structural system levels with an emphasis on advanced composite materials and lightweight structures. Current research areas include sandwich structures, adhesive joints, fire endurance and fatigue and fracture of advanced composite materials, joints and structural components. Together with basic research, collaboration with industry and the resulting technology transfer and product development are of key importance.

Honors, memberships, scientific community services

Founding member (2002) and Fellow of the International Institute for FRP in Construction IIFC
Member of 52 International Scientific Committees since 2001
Editorial Board member of Composite Structures and International Journal of Adhesion and Adhesives
Innovation Awards of JEC Composites (Journées européennes des composites), Paris, 2007 and 1999



Bibliometric indicators

[Google Scholar](#) (Jan. 2019)

h = 37, 4268 citations

167 peer-reviewed publications

(93 since 2011)

2 books

Most important grants since 2011

Composite sandwich bridge decks on fire. Swiss National Science Foundation NSF.

Progressive fatigue damage modeling of FRP structural assemblies. Swiss National Science Foundation NSF.

Development of a prestressed and permanent soil-/rock anchor made of non-corroding CFRP fiber-reinforced polymers. Swiss Innovation Promotion Agency CTI.

Innovation, technology transfer & impact on society

[Avançon Bridge 2012](#)

[Novartis Campus Main Entrance Building 2006](#)

[Pontresina Bridge 1997](#)

Main cooperative work / collaborative projects

Sustainable marine infrastructure enabled by the innovative use of seawater sea-sand concrete and fibre-reinforced polymer composites. Collaboration with the Hong Kong Polytechnic University, HK Research Grants Council, 2018.

Lightweight, durable and self-sustainable modular composites buildings. Collaboration with Monash University, Australian Research Council, 2017.

Structural Eurocode for fibre-reinforced polymer (FRP) structures. Collaboration within working group WG4 and as a Project Team member to establish the Technical Specification (Mandate M/515, Phase 3).

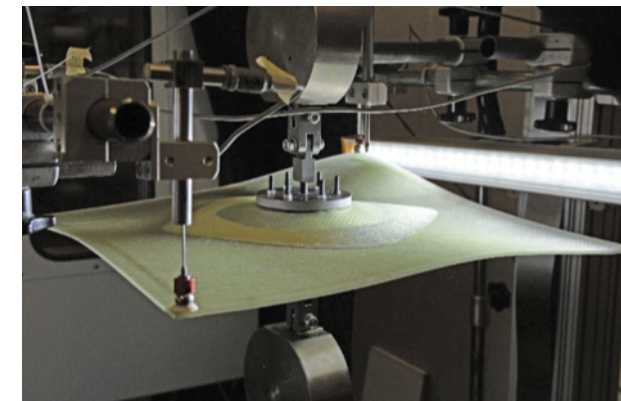
Key publications since 2011

Keller T, Theodorou N, Vassilopoulos A, de Castro J. Effect of natural weathering on durability of pultruded glass fiber-reinforced bridge and building structures. Journal of Composites for Construction 20(1), 2016, 04015025.

Keller T, Rothe J., de Castro J, Osei-Antwi M. GFRP-balsa sandwich bridge deck - concept, design and experimental validation. Journal of Composites for Construction 18/2 (2014).

Keller T, Kenel A, Koppitz R. Carbon fiber-reinforced polymer punching reinforcement and strengthening of concrete slabs. ACI Structural Journal 110/6 (2013) 919-927.

Keller T, Vassilopoulos AP, Manshadi BD. Thermomechanical behavior of multifunctional GFRP sandwich structures with encapsulated photovoltaic cells. Journal of Composites for Construction 14/4 (2010) 470-478.



Dolaana Khovalyg

Assistant Professor, Tenure Track Thermal Engineering for the Built Environment Laboratory (TEBEL)

tebel.epfl.ch

MSc Thermal Engineering (2007, Moscow Power Engineering Institute, Russia)

PhD Mechanical Engineering (2017, University of Illinois at Urbana-Champaign, USA)

Keywords

Thermal engineering, thermal comfort, heating, ventilation and air-conditioning (HVAC), water-energy nexus, integrated design of building services, energy performance of buildings

Career trajectory

2011-2013	Visiting Scholar, University of Illinois at Urbana-Champaign (UIUC), USA
2013-2014	Senior Research Engineer, ITMO University, Russia
2014-2017	Research Assistant, UIUC, USA
2017-2018	Postdoctoral Fellow at Technical University of Denmark (DTU), Int. Center for Indoor Environment and Energy (ICIEE)
2018 to date	Assistant Professor, EPFL, Switzerland

Research mission & relevance

The mission of TEBEL is to contribute to the overall energy reduction goal of the society and to advance thermal engineering for the built environment by undertaking a multidimensional approach such as (i) integrated design, (ii) multi-objective optimization, (iii) maximized heat recovery, and (iv) satisfaction of the dynamic demand profile via advancing our understanding of occupants behaviour and their interaction with engineering services of the buildings. The research approach of TEBEL includes building energy simulations, CFD simulations, field studies and laboratory experimentations both on the supply and demand side.

Honors, memberships, scientific community services

Associate Member, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
Voting member, Standing Standard Project Committee ASHRAE 55
“Thermal Environmental Conditions for Human Occupancy”
Secretary, ASHRAE Technical Committee 7.4 “Exergy Analysis for Sustainable Buildings”
Member of the CISBAT 2019 Conference Scientific Committee



Bibliometric indicators

[Google Scholar](#) (Feb. 2019)

h = 3, 26 citations

7 peer-reviewed journal papers

8 conference papers

Most important grants since 2011

eCOMBINE – Interaction between energy use, COMfort, Behaviour, and Indoor Environment in office buildings (Swiss Federal Office of Energy, 2019-2021)

Main cooperative work / collaborative projects

HORIZON 2020-10 project EE-04-2016: Model Predictive Control and Innovative System Integration of GEOTABS in Hybrid Low Grade Thermal Energy Systems (UGent, DTU, ENERGOKLASTR, Geoter, KU LEUVEN, REHVA, LEMON Consult, BOY, Maastricht Univ, Uponor, Viessmann, Climate Futures)

ARC-HEST: Architecture for Human Environment with Smart Technologies (exchange school 2019-2020) – Swiss-Korean academic exchange program established between EPFL, Uni-FR, HEIA-Fr from Switzerland and EWHA University, SungKyunKwan University, Hanyang University from South Korea.

eCOMBINE (SFOE project 2019-2021) - collaboration with EPFL's labs LIPID and HOBEL, and with the tech company LOGITECH.

Key publications since 2011

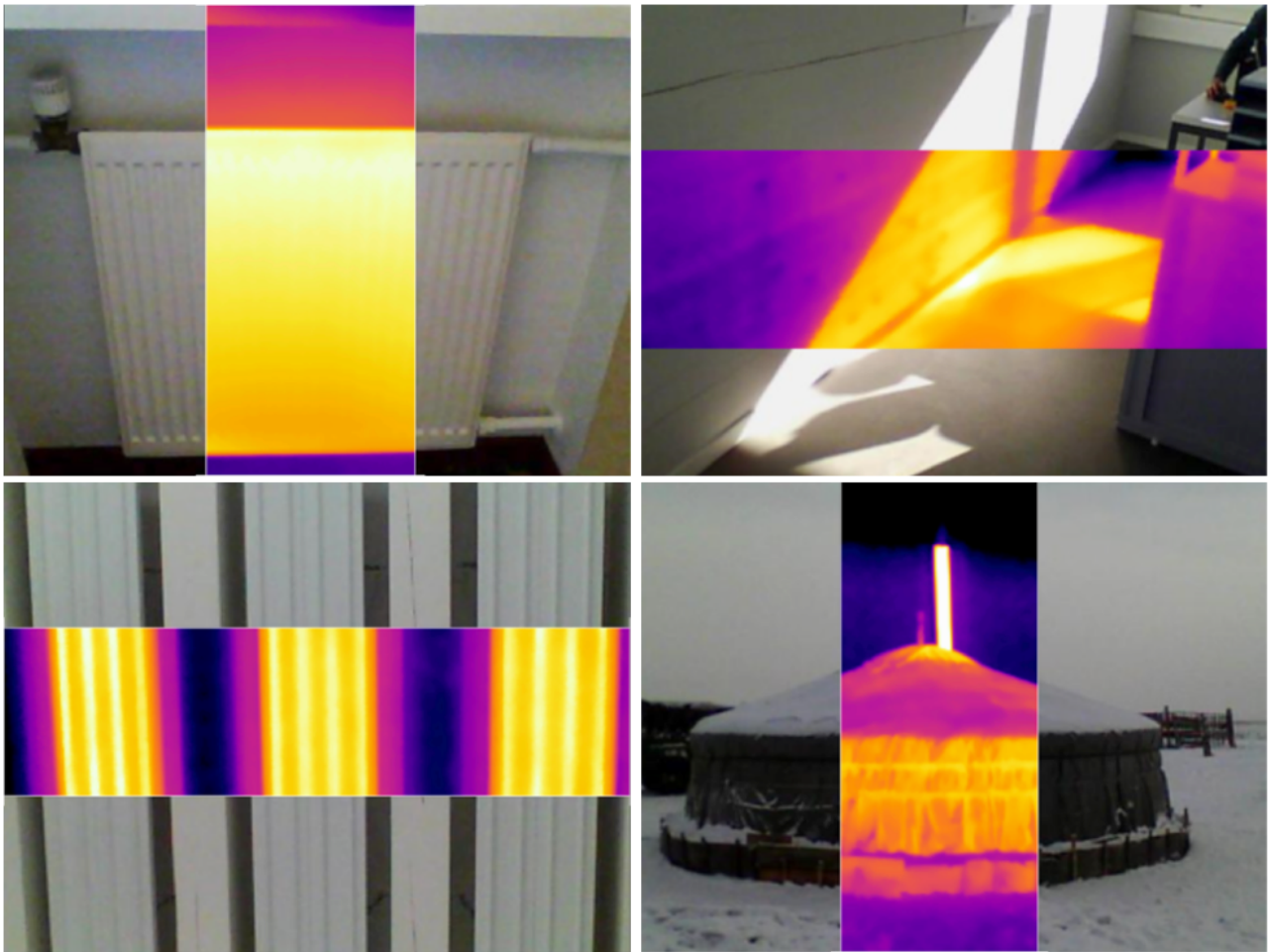
Khovalyg D., Kazanci O. B., Gundlach I., Halvorsen H., Bahnfleth W.P., Toftum J., Olesen B. W. (2019) Impact of Indoor Environmental Quality Standards on Simulated Energy use of Buildings, Energy and Buildings

Khovalyg D., Kazanci O.B., Gundlach I., Halvorsen H., Bahnfleth W.P., Toftum J., Olesen B.W. (2019) Critical Review of National and International Standards on Indoor Environment, Energy and Buildings

Kazanci O.B., Khovalyg D., Olesen B.W, Performance evaluation of radiant and convective cooling/heating systems & Survey on HVAC related potential research themes for office buildings - Final Report, 2018, DTU, Denmark

Khovalyg D., Hrnjak P. S., Jacobi A. M., (2018) Heat flux variation between neighboring channels in compact minichannel heat exchangers, Applied Thermal Engineering, Vol. 135, pp. 418-434

Hamed A. M., Pagan-Vazquez A., Khovalyg D., Zhang Z., Chamorro L. P. (2017) Vortical structures in the near wake of tabs with various geometries, Journal of Fluid Mechanics, Vol. 825, pp. 167-188





Full Professor
Laboratory of Soil Mechanics (LMS)

lms.epfl.ch
MSc, Civil Engineer, Ecole Nationale des Travaux Publics, Algiers, 1987
Advanced MSc Soil and Structural Mechanics, Ecole Centrale Paris, 1989
Ph.D. with honours: «Summa cum laude», Ecole Centrale Paris, 1993

Keywords

Advanced Geomechanics, Energy Geostructures, Environmental and Energy Sustainability, Geotechnical Engineering, Soil Structure Interaction, Slope Stability, Engineering Geology, Soil Improvement

Career trajectory

2012 to date	Director, Civil Engineering Section, EPF
2008 to date	Director - Laboratory for Soil Mechanics, EPFL
2012 to date	Chair Professor, Soil Mechanics, Geoengineering and CO2 Storage, EPFL
2013 to date	Member, Direction of the ENAC School, EPFL
2014-2017	Member, ENAC Academic Promotion Committee, EPFL
2008-2012	Director, Doctoral Program in Mechanics, EPFL
2005-2008	Adjunct Professor, leader of the Environmental Geomechanics Group, EPFL
1994-2005	Senior scientist, EPFL
1993-1994	Research scientist, Laboratory for Mechanics, Ecole Centrale Paris

Research mission & relevance

My group consists of about 30 people including 13 PhD students, 7 post-docs and 3 research engineers. It is active in the fields of Computational Geomechanics, Geotechnical Engineering, Energy, Geoenvironmental Engineering and Pollution, Natural Hazards and Climate Change as well as Transportation Engineering. In particular, the activities are focused on the fundamental study of soils and shales and man-made geo-systems with an emphasis on the mechanics of various interacting multiscale and multiphysics phenomena. This includes theoretical and numerical approaches, engineering applications including technology transfer, as well as the development of an advanced experimental geomechanical lab.

Honors, memberships, scientific community services

2018	Chair of the Evaluation Panel of Civil and Geological Engineering R&D Units of Portugal.
2018	30th Roberval Award at the French Academy of Science
2018 to date	Honorary Director, International Joint Research Center for Energy Geotechnics in China
2016	RM Quigley Award from the Canadian Geotechnical Society
2016 to date	Executive Committee representative for the Government of Switzerland in the International Energy Agency Greenhouse R&D Technology Collaboration Program

Bibliometric indicators

Scopus (Jan. 2019):
H-index=35, 4950 citations
Google scholar (Jan. 2019):
H-index = 46, 10043 citations
over 300 peer reviewed papers
12 books

Most important grants since 2011

2018: Advanced ERC (European Research Council): BIOGEOS (BIO-mediated GEO-material Strengthening), funded by the European Research Council
2017: Cyclic Thermo-Mechanical Behaviour of Energy Piles, funded by Swiss National Science Foundation
2014: Geo-mechanical investigations of bioimproved soils, funded by Swiss National Science Foundation

Innovation, technology transfer & impact on society

Co-founder of the start-up MeduSoil in the area of soil improvement (Patent: a geosynthetic element for soil bio-improvement (PCT /EP2017 /062995): medusoil.com
Co-founder of the start-up GEOEG in the area of Energy Geostructures: <https://geoeg.net>
Developer of the commercial software for the design of energy geostructures <http://lms.epfl.ch/thermopile>

Honors, memberships, scientific community services (continued)

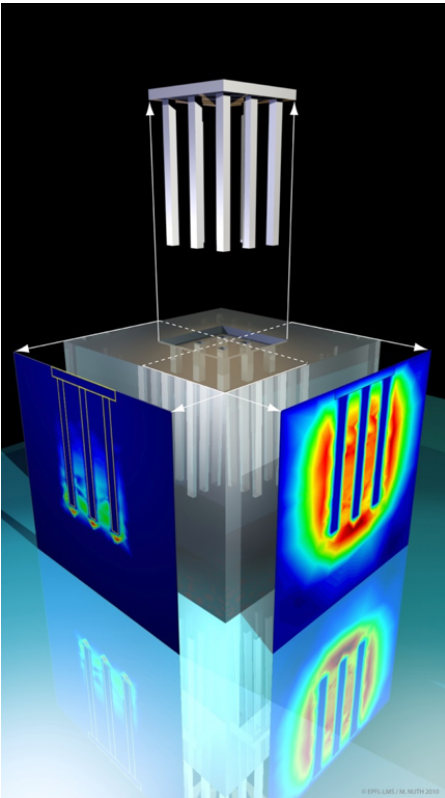
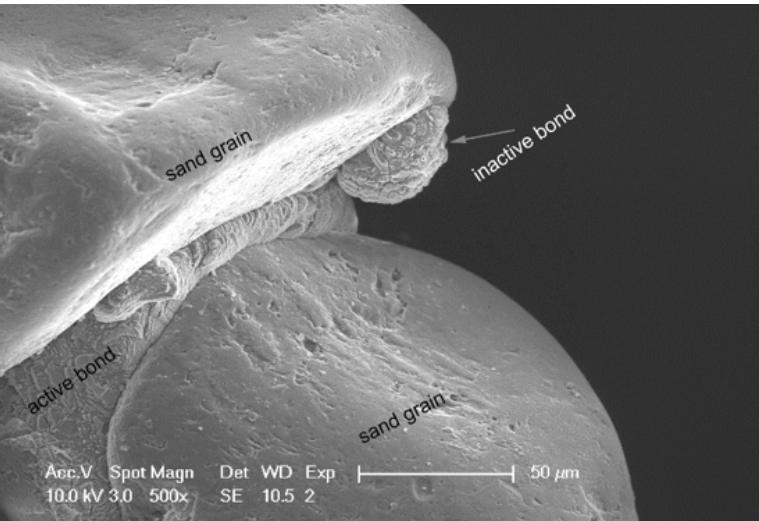
2016 to date	Advisory professor, Hohai University, Nanjing, China. 2014-2015 Member of the EU-ERC Consolidator Grants panel dealing with Products and Processes Engineering
2007 to date	Adjunct professor, School of Civil and Environmental Engineering, Duke University, USA.
2014	12th G.A. Leonards Lecture from the University of Purdue
2014 to date	Editor in Chief of the International journal Geomechanics for Energy and the Environment (Elsevier)
2012	Vardoulakis Lecture from the University of Minnesota

Main cooperative work / collaborative projects

2018: Co-founder of the International Joint Research Center for Energy Geotechnics in China
2017- current: Leader of Work Package 1 (Geo-energy) of the Swiss Competence Center for Energy Research – Supply of Electricity (SCCER-SoE)
2014 – 2017: Partner of the GREAT project: Geotechnical and Geological Responses to Climate Change: Exchanging Approaches and Technologies on a world-wide scale (17 partners from 11 countries)

Key publications since 2011

Di Donna, A., Loria, A. F. R., & Laloui, L. (2016). Numerical study of the response of a group of energy piles under different combinations of thermo-mechanical loads. Computers and Geotechnics, 72, 126-142.
Terzis, D., & Laloui, L. (2018). 3-D micro-architecture and mechanical response of soil cemented via microbial-induced calcite precipitation. Nature Scientific reports, 8(1), 1416.
Fauriel, S., & Laloui, L. (2012). A bio-chemo-hydro-mechanical model for microbially induced calcite precipitation in soils. Computers and Geotechnics, 46, 104-120.
Mimouni, T., & Laloui, L. (2015). Behaviour of a group of energy piles. Canadian Geotechnical Journal, 52(12), 1913-1929.
Energy Geostructures: Innovation in Underground Engineering. L. Laloui, A. Di Donna (Editors). Wiley-ISTE, 250 pages, ISTE Ltd. and John Wiley and Sons, Hoboken, NJ, ISBN: 9781848215726. 2014.



Brice Lecampion

Assistant Professor, Tenure Track
Geo-Energy Lab – Gaznat chair on Geo-Energy (GEL)

gel.epfl.ch

MSc Geomechanics & Geophysics (1999, Université Paris 6, France)
PhD Mechanics (2002, Ecole Polytechnique, France)

Keywords

Mechanics of fluid saturated porous media, fracture, hydraulic stimulation, deep geo-energy projects

Career trajectory

2003-2006	Research Scientist (CSIRO, Melbourne, Australia)
2006-2010	Senior Engineer – Schlumberger Ltd (Clamart, France)
2010-2013	Senior Scientist – Schlumberger Doll Research(Cambridge, USA)
2013-2015	Principal Scientist – Schlumberger Ltd (Paris, France)
2015 to date	Tenure-Track Assistant Professor, EPFL (Switzerland)

Research mission & relevance

Our research focuses on the interplay between stress, deformation, fracture and fluid flow in geo-materials and their applications in the field of environmental, geo-energy engineering, seismology and tectonophysics. In particular, my laboratory develops in parallel cutting-edge computational tools and advanced experimental set-up to improve the predictions of fluid and mechanically induced fractures with the aim to improve geo-engineering practices from geothermal energy production to nuclear waste management.

Honors, memberships, scientific community services

Invited MTS Professor - Department of Civil and Geo-Engineering, University of Minnesota – 2018-2019
Mechanics of Solids, Structures and Fluids (track 12) Plenary Lecture at the 2015 ASME International Mechanical Engineering Congress & Exposition, Houston, TX, USA, 2015.
Member of the American Geophysical Union (since 2003), Society of Petroleum Engineers (since 2004), American Rock Mechanics Association (since 2005)
Guest Editor- special issue on Hydraulic Stimulation (2019) Geomechanics for Energy and The Environment



Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?user=H221570) (Jan. 2019)

H=22, 1570 citations

Scopus: h=18, 1079 citations

55 peer-reviewed publications

Most important grants since 2011

“Hydraulic stimulation of anisotropic rocks for geo-energy” SNSF Career Grant (160577) Nov.2015-Nov 2019

“STIM-DESIGN: hydraulic stimulation design for deep geothermal reservoirs” - Swiss Federal Office of Energy 2016-2019“

Innovation, technology transfer & impact on society

Multiple patents on well integrity, stimulation of unconventional reservoirs, reservoir geomechanics characterization

Developer of [PyFrac](#) – an open-source solver for hydraulic fracture propagation

Co-Founder of [Epslog SA](#) (2005) – a company specialized in rock scratch testing

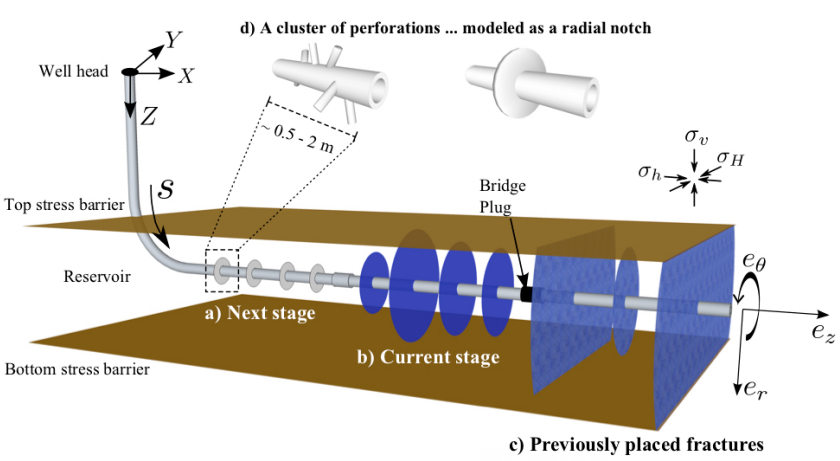
Main cooperative work / collaborative projects

Development of advanced numerical solver for fault mechanics: Dr Harsha Bhat (ENS, France), Dr S. Chaillat-Loiseuille (ENSTA, France)

Mechanics of hydraulic fracturing: Prof. D. Garagash (Dalhousie University, Canada), Prof. Andrew Bungler (U. Pittsburgh, USA)
2016– current: Active member of the Swiss Competence Center for Energy Research – Supply of Electricity (SCCER-SoE)

Key publications since 2011

- H. Zia, B. Lecampion, and W. Zhang. Impact of the anisotropy of fracture toughness on the propagation of planar 3D hydraulic fracture. *International Journal of Fracture*, 211(1-2):103–123, (2018).
- F. E. Moukhtari and B. Lecampion. A semi-infinite hydraulic fracture driven by a shear thinning fluid. *Journal of Fluid Mechanics*, 838:573–605, (2018).
- B. Lecampion, J. Desroches, R. G. Jeffrey, and A. P. Bungler. Experiments versus theory for the initiation and propagation of radial hydraulic fractures in low permeability materials. *Journal of Geophysical Research: Solid Earth*, 122, (2017).
- B. Lecampion and J. Desroches. Simultaneous initiation and growth of multiple radial hydraulic fractures from a horizontal wellbore. *Journal of the Mechanics and Physics of Solids*, 82:235–258, (2015).
- B. Lecampion and D. I. Garagash. Confined flow of suspensions modeled by a frictional rheology. *Journal of Fluid Mechanics*, 759:197–235, (2014).



Pierino Lestuzzi

Senior Scientist (MER) Applied Computing and Mechanics Laboratory (IMAC)

imac.epfl.ch

Master Civil Engineering (1988, EPFL Lausanne, Switzerland)

PhD Structural Dynamics (2000, ETHZ Zurich, Switzerland)

Keywords

Seismic behavior of masonry and RC structures; seismic assessment of existing structures; seismic vulnerability of historical monuments; seismic risk

Career trajectory

1988-1989	Engineer, tunneling, IUB Ingenieur Unternehmung, Bern
1989-1992	Teaching assistant and consultancy projects, IMAC, EPFL
1992-1995	Structural engineer, Richardet & Ass. SA, Yverdon
1995-2000	Research assistant (PhD thesis), IBK, ETHZ
2000-2007	Lecturer, IMAC, EPFL
2007 to date (40%)	Partner, Résonance Ingénieurs-Conseils, Carouge
2007 to date (60%)	Senior scientist (MER), IMAC, EPFL

Research mission & relevance

Within the field of structural dynamics, the research effort is focused on seismic vulnerability of existing buildings. The objective is to develop modern approaches and to improve upon current engineering tools for better seismic assessments. Quantifying the usefulness of measurements is a current topic. Other research projects involve evaluation of seismic risk at urban and country scales.

Honors, memberships, scientific community services

Student Prize 2004 for teaching at the ENAC faculty.
Munro Prize 2007 for the best paper published in Engineering Structures, Elsevier.
Student Prize 2008 for teaching at the ENAC faculty.
Member of Laboratory Coordination Group (GIS) of IIC
Co-chair of the Swiss Structural Standards Commission SIA KTN
Member of Conseil de Fondation, Fondation de prévention des établissements cantonaux d'assurance
Committee member, Vaud Section of Swiss Society of Engineers and Architects, SIA



Bibliometric indicators

Google Scholar (Jan. 2019) h = 21,
1644 citations

49 peer-reviewed publications
(27 since 2011)

6 books

Most important grants since 2011

Seismic safety of cultural-heritage
masonry buildings, Federal Office for
Civil Protection

Earthquake-risk model for Basel city,
Canton of Basel-City

Earthquake-risk model for Switzerland,
Federal Office for the Environment

Innovation, technology transfer & impact on society

Chair of the Swiss Standard commission
SIA 261: «Actions on Structures»

Involvement in the specialized
engineering company Résonance SA

Contribution to the development of a
special course for post-earthquake
evaluation (with canton of Valais).

Main cooperative work / collaborative projects

Ambient noise measurement of existing buildings for seismic vulnerability assessment in collaboration with University of Grenoble, France

Seismic vulnerability assessment of the cities of Sion and Martigny in Valais in collaboration with University of Genoa, Italy

Earthquake risk model for Switzerland in collaboration with Swiss Seismological Service, ETH Zurich

Key publications since 2011

Biass S., Falcone J.-L., Bonadonna C., di Traglia F., Pistolesi M., Rosi M., Lestuzzi P.: Great Balls of Fire: A probabilistic approach to quantify the hazard related to ballistics - A case study at La Fossa volcano, Vulcano Island, Italy. Journal of Vulcanology and Geothermal Research. Vol 325, 2016, pp. 1-14.

Lestuzzi P., Podestà S., Luchini C., Garofano A., Kazantzidou-Firtinidou D., Bozzano C., Bischof P., Haffter A., Rouiller J.-D.: Seismic vulnerability assessment at urban scale for two typical Swiss cities using Risk-UE methodology. Natural Hazards. Vol 84/1, 2016, pp. 249-269.

Lestuzzi P., Smith I.F.C.: Dynamique des structures. Bases et applications pour le génie civil. Presses Polytechniques et Universitaires Romandes. Lausanne, 2017, 235 p.

Michel C., Karbassi A., Lestuzzi P.: Evaluation of the seismic retrofitting of an unreinforced masonry building using numerical modeling and ambient vibration measurements. Engineering Structures. Vol 158, 2018, pp. 124-135.

Diana L., Manno A., Lestuzzi P., Podestà S., Luchini C.: Impact of displacement demand reliability for seismic vulnerability assessment at an urban scale. Soil Dynamics and Earthquake Engineering, Vol 112, 2018, pp. 35-52.



Dusan Licina

Assistant Professor Tenure Track Human-Oriented Built Environment Lab (HOBEL)

hobel.epfl.ch
BSc/Msc: Mechanical engineering (2010, University of Belgrade)
PhD: Civil and Environmental Engineering (2015, National University of Singapore and Technical University of Denmark)

Keywords

Indoor air quality, human exposure assessment, building ventilation, IoT sensing, thermal comfort, human behavior, energy efficiency

Career trajectory

2018 to date	Assistant Professor, EPFL, Switzerland Head of the Human-Oriented Built Environment Lab
2017-2018	Director, Standard development International WELL Building Institute, NY, USA
2015-2017	Postdoctoral Fellow at Civil and Environmental Eng. University of California Berkeley, CA, USA

Research mission & relevance

The research produced by HOBEL is driven by the need to advance knowledge of the intersections between people and the built environment. HOBEL specializes in air quality engineering, focusing on understanding of concentrations, dynamics and fates of air pollutants within buildings, and development and application of methods to quantitatively describe relationships between air pollution sources and consequent human exposures. The research interests also encompass optimization of building ventilation systems with an aim to improve air quality and thermal comfort in an energy-efficient manner.

Honors, memberships, scientific community services

2018	Ralph G. Nevins Physiology & Human Environment, ASHRAE
2015	Top 1% cited papers in Indoor Air journal during 2006-2015
2013	ASHRAE Grant-in-Aid for outstanding researchers, ASHRAE
2013	President's Graduate Fellowship, National Univ. of Singapore
2013	Award "Superste" for talents in natural sciences category, Erste

Memberships
American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
International Society of Indoor Air Quality and Climate (ISIAQ)
American Association for Aerosol Research (AAAR)
International Building Performance Simulation Association (IBPSA)
Society for Air Conditioning, Heating and Refrigeration (HVAC&R)



Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?user=9383888888888888)
h = 9, 260 citations (Feb. 2019)
14 peer-reviewed publications

Most important grants since 2011

-Smart Living Lab: 14'995 CHF
(PI): "Internal environmental performance of Swiss office buildings: A pilot study"

-Swiss Federal Office of Energy SFOE: 190'016 CHF
(Co-PI): "Holistic and Interactive Approach to Evaluate the Cause-Effect Relationship between Occupants, Indoor Environment, and Energy Use in Buildings"

Innovation, technology transfer & impact on society

Author of "Air" and Thermal Comfort" concepts within WELL Building Standard (WELL v2) – currently ~1'600 building certified in 48 countries

Honors, memberships, scientific community services (continued)

Scientific community services
ASHRAE Standard 62.1 (Standard for Ventilation and Indoor Air Quality) committee member, Atlanta, USA (2018-present)
WELL Air and Thermal Comfort Concept Advisory, New York, USA (2018-present)
ASHRAE Technical Committee 2.1 (Physiology and Human Environment) board member, Atlanta, USA (2016 – present)
Organizing committee member of the Swiss-Korean Exchange Program that includes Summer School in Korea (2019) and Winter School in Switzerland (2020). (2018 – present)
Organizing committee member, HVAC&R conference, Serbia (2016-present)

Main cooperative work / collaborative projects

Collaboration with TEBEL and LIPID (EPFL) on "Holistic and Interactive Approach to Evaluate the Cause-Effect Relationship between Occupants, Indoor Environment, and Energy Use in Buildings".
Collaboration with University of California Berkeley on two projects: "Personal CO2 cloud: laboratory measurements of metabolic CO2 inhalation zone concentration and dispersion in a typical office desk setting" and "The resilience of naturally and mechanically ventilated buildings to forest fire generated fine particulate matter"
Collaboration with Denmark Technical University and Max-Planck-Institute for Chemistry on the project "Humans as sources of airborne chemicals and bioaerosols"

Key publications since 2011

Licina D, Nazaroff W. (2018) Clothing as a transport vector for airborne particles: Chamber study, Indoor Air 28(3):404-414
Licina D, Tian Y, Nazaroff W. (2017) Emission rates and the personal cloud effect associated with particle release from the perihuman environment, Indoor Air 27(4), 791-802
Licina D, Bhanger S, Brooks B, Baker R, Firek B, Tang X, Morowitz MJ, Banfield JF, Nazaroff WW. (2016) Concentrations and sources of airborne particles in a neonatal intensive care unit, PLoS ONE 11:e0154991
Licina D, Melikov A, Pantelic J, Sekhar C, Tham KW. (2015) Human convection flow in spaces with and without ventilation: Personal exposure to floor released particles and cough released droplets, Indoor Air 25(6):672-82
Pantelic J, Tham KW, Licina D. (2015) Effectiveness of a personalized ventilation system in reducing personal exposure against directly released simulated cough droplets, Indoor Air 25(6):683-93
Licina D, Melikov A, Sekhar C, Tham KW. (2015) Human convective boundary layer and its interaction with room ventilation flow, Indoor Air 25, 21-35 – Most influential papers in the field, top cited paper in Indoor Air journal during 2006–15.
Licina D, Pantelic J, Melikov A, Sekhar C, Tham KW. (2014) Experimental investigation of the human convective boundary layer in a quiescent indoor environment, Building and Environment 75: 79-91.





Associate Professor
Resilient Steel Structures Laboratory (RESSLab)

resslab.epfl.ch

Diploma (5-year) in Civil Engineering (2003, National Technical University of Athens, Greece)

MSc Structural Engineering and Geomechanics (2004, Stanford University, USA)

PhD Performance-based Earthquake Engineering (2008, Stanford University, USA)

Keywords

Nonlinear analysis, experimental testing, performance-based design,
high-performance materials, steel & composite structures, automated
fabrication, life-cycle assessment

Career trajectory

2004-2008	Research Assistant, Stanford University, USA
2008-2009	Post-doctoral Scientist, Stanford University, USA
2009-05	Post-doctoral Scientist, UC Berkeley, USA
2009-2010	Post-doctoral Scientist, Kyoto University, Japan
2010-2015	Assistant Professor Tenure-track, McGill University, CA
2015-2016	Associated Professor, McGill University, CA
2015-05	William Dawson Chair for Infrastructure Resilience
2016 to date	Associated Professor, Tenured, EPFL, CH

Research mission & relevance

Scientific themes in the Resilient Steel Structures Laboratory (RESSLab) are at the interface of mechanics and structures. We investigate how to leverage state-of-the-art materials with automated manufacturing processes for the development of structural systems with enhanced performance over their life-cycle. Such concepts are validated through multi-scale experimental testing including the development of simulation methods of various fidelities for predictive modeling and maintenance. These along with data-driven approaches are employed to further comprehend the physical mechanisms that cause deterioration in civil infrastructure with emphasis on metallic structures under multi-hazards.

Honors, memberships, scientific community services

2019	ASCE Walter L. Huber Civil Engineering Research Prize
2019 to date	Editorial Board Member, Earthquake Spectra (EERI)
2018 to date	ASCE Data Papers Committee – Chair (ASCE)
2015 to date	Associate Editor, Journal of Structural Engineering (ASCE)
2015-2020	William Dawson Scholar for Infrastructure Resilience
2014	Christophe Pierre Award for Research Excellence – Early Career (McGill University)
2013	ASCE State-of-the-Art of Civil Engineering Award (ASCE)
2012 and 2013	ASCE Outstanding Reviewer Award (ASCE)

Bibliometric indicators

[Google Scholar](#) (Mar 2019) h = 24,
2479 citations

48 peer-reviewed journal papers
(46 since 2011) and 2 invited papers

104 conference papers of which 85 fully peer-reviewed (75 since 2011 of which 70 fully peer-reviewed)

5 book chapters

Most important grants since 2011

Advanced simulation platform for collapse risk assessment of steel frame buildings (Swiss NSF, Engineering, 2016-2020)

Controller for geographically distributed
hybrid testing and simulation across
scales (Swiss NSFREquip, 2018-2020)

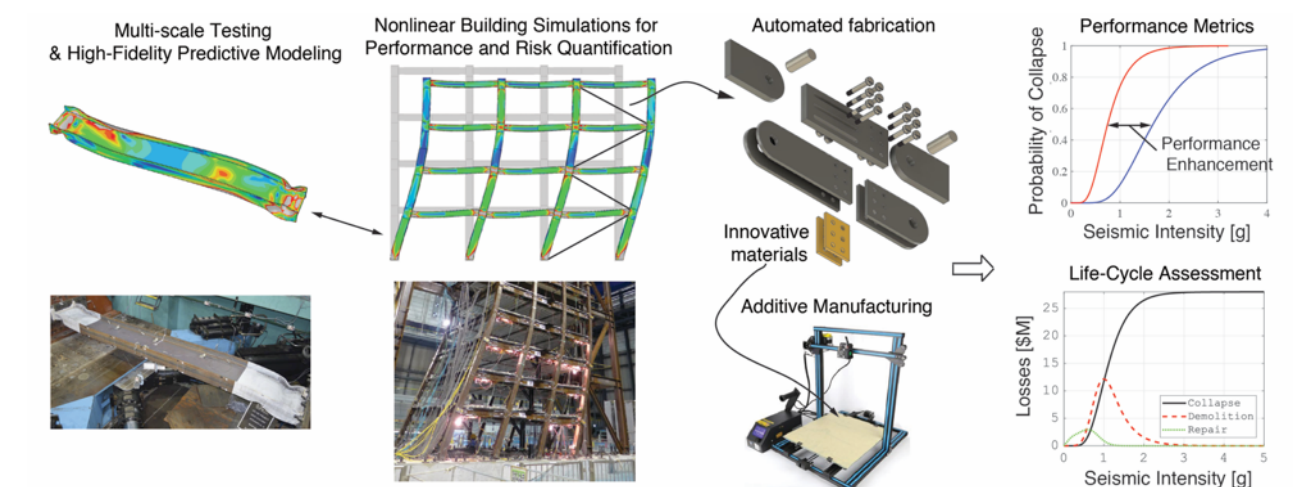
Ductile steel fuses for the protection of critical non-structural components (European Union, SERA, 2018-2020)

Innovation, technology transfer & impact on society

EaRL & IIDAP: Software for Earthquake Risk and Loss Assessment

Web-based interactive tools for
Performance-based earthquake
Engineering (<http://resslabtools.epfl.ch/>)

Guidelines for nonlinear modeling & performance assessment in support of seismic evaluation, retrofit and design (NIST 2018)



Honors, memberships, scientific community services (continued)

2011	Outstanding Teaching Award (McGill University)
2005	'John Argyris' Computational Mechanics Award (Cyprus)
2016 to date	Member of several European (CEN/M515/PT2), Canadian (CSA S16) and American (ASCE-41) Committees for Standardization

Main cooperative work / collaborative projects

(2018–now) European Union (SERA) Collaborative Research Project: with Stanford University, USA (E. Miranda) on the development of dissipative steel fuses to mitigate seismic effects on nonstructural building content

(2013–2017) Collaborative research grant, PhD co-advising (Dr. Y. Suzuki, Nippon Steel & Sumitomo Metal Corporation, Japan R&D Division Futsu Laboratory) on the development of nonlinear models and the quantification of structural robustness of buildings equipped with high-performance steels

(2016–now) Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research Grant, PhD co-advising: with École Polytechnique Montréal, CA (R. Tremblay, Civil Engineering) and McGill University, CA (C. Rogers, Civil Engineering and Applied Mechanics) on the development of processes that improve the fabrication and performance of steel structures under extreme loading

Key publications since 2011

Akcelyan, S., Lignos, D.G., Hikiño, T. (2018). "Adaptive Numerical Method Algorithms for Nonlinear Viscous and Bilinear Oil Damper Models Subjected to Dynamic Loading", *Soil Dynamics and Earthquake Engineering*, Vol. 113, pp. 488-502.

Elkady, A., Lignos, D.G. (2018). "Full-Scale Testing of Deep Wide-Flange Steel Columns under Multi-Axis Cyclic Loading: Loading Sequence, Boundary Effects and Out-of-Plane Force Demands", ASCE, Journal of Structural Engineering, Vol. 144 (2), pp. 04017189.

Hwang, S-H., Lignos, D.G. (2017). "Earthquake-Induced Loss Assessment of Steel Frame Buildings with Special Moment Frames Designed in Highly Seismic Regions", *Journal of Earthquake Engineering and Structural Dynamics*, EESD, Vol. 46 (13), pp. 2141-2162.

Karamanci, E., Lignos, D.G. (2014). "Computational Approach for Collapse Assessment of Concentrically Braced Frames in Seismic Regions," ASCE, Journal of Structural Engineering, Vol. 140(8), pp. A4014019/1-15

Lignos, D.G., Krawinkler, H. (2011). "Deterioration Modeling of Steel Components in Support to Collapse Prediction of Steel Moment Frames Under Earthquake Loading", *ASCE Journal of Structural Engineering*, Vol. 137 (11), pp. 1291-1302.

Jean-François Molinari



Full Professor Computational Mechanics Laboratory (LSMS)

lsms.epfl.ch

M.S. Mechanical Engineering (1997, University of Technology of Compiègne, France)

M.S. Aeronautics (1997, California Institute of Technology, USA)

Ph.D. Aeronautics (2001, California Institute of Technology, USA)

Keywords

Computational methods across scales, high-performance computing, discrete and continuum systems, mechanics of materials, fracture mechanics, friction and wear processes

Career trajectory

2000-2005	Assistant Professor, Mechanical Eng., Johns Hopkins, USA (tenure in 2006)
2005-2007	Professor, Mechanical Eng., ENS Cachan, France
2006-2009	Lecturer, Mechanical Eng., Ecole Polytechnique, France
2006-2011	Associate Research Prof., Mech. Eng., Johns Hopkins, USA
2007-2012	Associate Professor, Civil Eng., EPFL
2010 to date	joint appointment in Materials Science Institute, EPFL
2012 to date	Full. Prof. Civil Eng., EPFL
2013-2017	Director of Civil Eng. Institute, EPFL

Research mission & relevance

We conduct research at the interface between Mechanics, Materials Science, and Scientific Computing. We develop robust, physics-based numerical methods for High-Performance Computing, and share our knowledge by releasing diverse open source software (Molecular Dynamics, Discrete Dislocations, Boundary-Element Method, Finite-Element Method, Direct Multiscale Methods). Our research activities span mechanisms from the small scale (materials, tribology) to large length scales (structural mechanics, geological scales). An important research theme in our group is friction and fracture. Recently, we have made headways at bringing a modern look at traditional engineering wear models.

Honors, memberships, scientific community services

2009	ERCstg award
2012 to date	Associate Editor for the Journal of Advanced Modeling and Simulation in Engineering Sciences
2017 to date	Founder and president of SWICCOMAS, Swiss association for computational science
2016 to date	Member of the European Solid Mechanics Conference Committee (ESMCC) of EUROMECH
2011 to date	Member of managing board of ECCOMAS, European Community on Computational Methods in Applied Science

Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?hl=fr&user=JF-Molinari) (Feb. 2019) h = 39, 4781 citations

Scopus: h = 34, 3463 citations

128 peer-reviewed publications (77 since 2011)

Most important grants since 2011

Contact mechanics of rough surfaces, SNF

Rapid Slip Nucleation at Frictional Interfaces. From Computer Earthquakes to Fundamental Theory Pedflux: pedestrian flow modeling in train stations, Weizmann foundation/ EPFL

Dynamic indentation induced damage in Si3N4, M2I Institute

Innovation, technology transfer & impact on society

Release of several open-source software for education and research in mechanics (ex: Akantu.ch)

Our advances in understanding particle emissions due to wear has lead to several collaborations with industrial partners

Honors, memberships, scientific community services (continued)

2011 to date Member of ECCOMAS committee on Computational Solids and Structural Mechanics

2013 to date Member of Swiss National Science Foundation (SNSF) division II commissions for SNSF professorship in Science and Engineering, now Excellenza grants

Main cooperative work / collaborative projects

Coupled atomistic/discrete dislocations in 3D (CADD3D). SNF, project partners : W.A. Curtin, G. Anciaux, J.F. Molinari (EPFL)

Modeling of the Silica-Alkali reaction in concrete, modeling the response of dams. Office of Energy. Project partners: K.

Scrivener and J.F. Molinari (EPFL)

Alkali-Silica Reaction in Concrete, SNF SINERGIA, project partners at EPFL, PSI, EMPA

Key publications since 2011

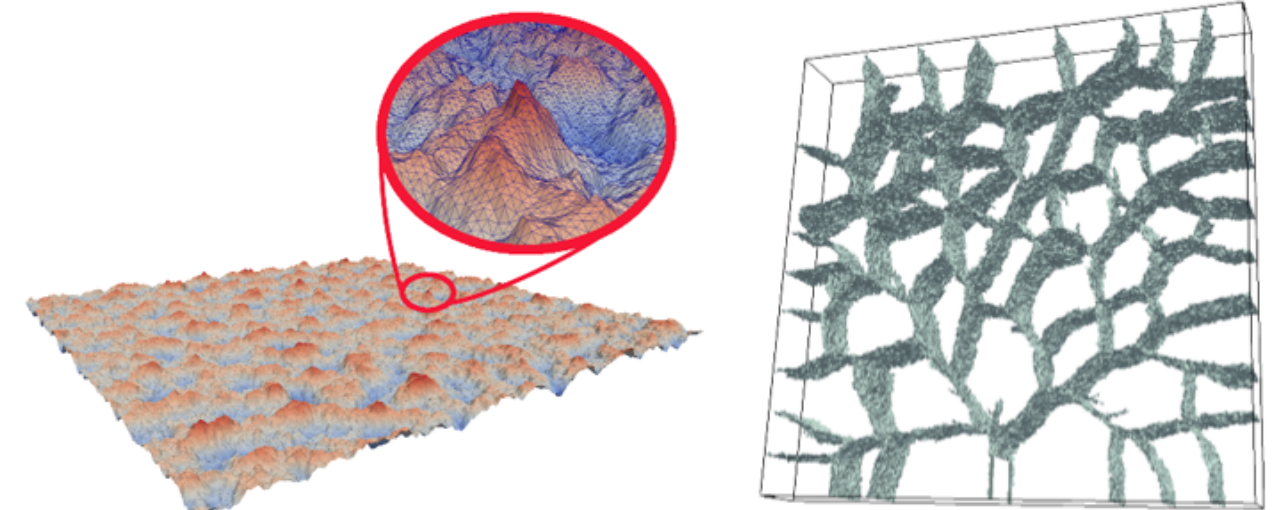
Aghababaei, R., Brink, T., Molinari, J.F. (2018). Asperity-level origins of transition from mild to severe wear, Physical Review Letters 120(18):186105. [doi:10.1103/PhysRevLett.120.186105](https://doi.org/10.1103/PhysRevLett.120.186105)

Barras, F., Geubelle, Ph., Molinari, J.F. (2017). Interplay between process zone and material heterogeneities for dynamic cracks, Physical Review Letters 119:144101. [doi:10.1103/PhysRevLett.119.144101](https://doi.org/10.1103/PhysRevLett.119.144101)

Aghababaei, R., Warner, D.H., Molinari, J.F. (2017). On the debris-level origins of adhesive wear, Proceedings of the National Academy of Sciences of the United States of America 114(30):7935-7940. [doi:10.1073/pnas.1700904114](https://doi.org/10.1073/pnas.1700904114)

Yastrebov, V.A., Anciaux, G., Molinari, J.F. (2017). The role of the roughness spectral breadth in elastic contact of rough surfaces, Journal of the Mechanics and Physics of Solids 107:469-493. [doi:10.1016/j.jmps.2017.07.016](https://doi.org/10.1016/j.jmps.2017.07.016)

Aghababaei, R., Warner, D.H., Molinari, J.F. (2016). Critical length scale controls adhesive wear mechanisms, Nature Communications 6:11816. [doi:10.1038/ncomms11816](https://doi.org/10.1038/ncomms11816)



Aurelio Muttoni

Full Professor Structural Concrete Laboratory (IBETON)

ibeton.epfl.ch

Diploma in Civil Engineering (1982, ETH Zurich, Switzerland)

PhD sc. techn. (1989, ETH Zurich, Switzerland)

Keywords

Structural engineering, concrete structures, bridge design, innovative structures, models for analysing concrete structures based on more mechanical and fundamental approaches

Career trajectory

Academia

Since 2000 Full professor of Structural Concrete at EPFL (part time since 2007)

1996-2001 Professor of Structural Design at “Accademia di Architettura”, USI, Switzerland 1982-1989 Doctoral student at ETH Zurich, Switzerland

Professional

Since 2007 Partner of structural engineering firm Muttoni et Fernández Ingénieurs Conseils (Ecublens, Switzerland)

1989-2001 Partner of structural engineering firm Grignoli Muttoni Partner (Lugano, Switzerland)

Research mission & relevance

Concrete is one of the most consumed materials in earth and cement production is currently responsible for a significant fraction of human's carbon footprint. Fundamental challenges need still to be addressed in the domain of structural concrete to lead to a sustainable and rational use of the material.

Amongst these challenges, the Structural Concrete Laboratory is focusing research efforts on fundamental topics such as:

Developing concrete structures with a reduced ecological footprint using new materials and new design approaches

Models for the design of new structures and the assessment of existing ones based on more mechanical and fundamental approaches: mechanical models replacing empirical ones, a step forward in fundamental and structural testing, multi-scale material approach, long-term behaviour of concrete structures, reliability and robustness of design.

Honors, memberships, scientific community services

Recipient of the American Concrete Institute (ACI) Chester Paul Siess Award for Excellence in Structural Research in 2010, co-recipient of the ACI Wason Medal for Most Meritorious Paper in 2014.

Member of several committees and task groups of CEN/TC250/SC2 (European code for concrete structures, since 2014)

Member of the presidium of the International Federation for Structural Concrete (*fib*, since 2011), convener and member of several commissions and task groups of *fib* (since 2002)



Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?hl=en&user=93333333333333333333) (Feb. 2019) h = 35, 4200 citations

122 peer-reviewed Scopus-indexed publications (90 since 2011)

2 books (English versions + translations in French, German and Italian, not including edited books such as conference proceedings)

Most important grants since 2011

Seismic behaviour of slab-column connections, SNSF

Fundamentals of shear transfer, SNSF

Influence of loading rate and sustained actions on the strength of reinforced concrete structures, Swiss Fed. Road Adm.

Innovation, technology transfer & impact on society

Holder of 5 patents (on structural and geotechnical engineering)

Leader of Project Team T1 for next generation of the European Code for Concrete Structures (2015-2018, code used by 500'000 engineers)

Leader and member of national and international code committees (Eurocode for concrete structures, International Model Code, Swiss codes SIA)

Honors, memberships, scientific community services (continued)

Special Mention (2002) and winner (2014) of the *fib* Awards for Outstanding Concrete Structures (worldwide recognition)

Main cooperative work / collaborative projects

Research project “Structural Response for Seismic European Design”, funded by the Seismology and Earthquake Engineering Research Alliance for Europe, Project #2017-2 (Poli. Milan (Italy)+ EPFL+ Un Nova (Portugal) + Un. Bucarest (Romania))

Eurocode 2 – European code for design of concrete structures (Leader of Project Team T1, groups of 6 colleagues from UK, Germany, Austria, Spain, Italy and Switzerland)

Leader of the group working on the mechanical models and the provisions for the next generation of the international Model Code for Concrete Structures in the chapters of shear and punching shear in slabs (5 members from EPFL, the University of Texas at Austin (USA), the University of Toronto (Canada) and the University of New South Wales (Australia))

Key publications since 2011

Muttoni A., The Art of Structures – Introduction to the functioning of Structures in Architecture, EPFL-Press, 2011, 269 p.

Drakatos, I., Muttoni, A., Beyer, K., Mechanical model for drift-induced punching of slab-column connections without transverse reinforcement, American Concrete Institute, Structural Journal, Vol. 115, 2018, pp 463-474

Muttoni, A., Fernández Ruiz, M., Niketic, F., Design versus assessment of concrete structures using stress fields and strut-and-tie models, American Concrete Institute, Structural Journal, Vol. 112, 2015, pp. 605–615

Amin, A., Foster, S.J., Muttoni, A., Derivation of the σ - ϵ relationship for SFRC from prism bending tests, Structural Concrete, Vol. 16, 2015, pp. 93-105

Fernández Ruiz, M., Muttoni, A., Sagaseta, J., Shear strength of concrete members without transverse reinforcement: a mechanical approach to consistently account for size and strain effects, Engineering Structures, Elsevier, Vol. 99, 2015, pp. 360–372



Alain Nussbaumer

Adjunct Professor Resilient Steel Structures Laboratory (RESSLab)

resslab.epfl.ch

M.Eng (5-year) in Civil Engineering (1988, EPFL, Switzerland)

PhD Propagation of long fatigue cracks (1994, Lehigh University, USA)

Keywords

Keywords fatigue, fracture mechanics, steel structures, structural glass, CFRP, fatigue, fracture mechanics, assessment, bridges, tanks

Career trajectory

Since 2016	RESSLAB, EPFL, Head: Prof. D. Lignos
2015	Head a.i. of ICOM, EPFL
2008 – 2014	Adjunct Professor, ICOM, EPFL. Head: Prof. J.-P. Lebet
1997 – 2008	Research engineer and lecturer, ICOM, EPFL. Head : Prof. M. A. Hirt
1994 – 1997	Engineer and researcher, CTICM, France. Head: Prof. J. Brozzetti
1990 – 1991	Young SNF research fellowship, Lehigh University, USA. Head : Prof. J.W. Fisher
1988 – 1990	Research assistant, ICOM, Lausanne

Research mission & relevance

My mission is to investigate and mitigate fatigue and fracture in steel, aluminum and glass structures. This topic is of relevance to the safety, serviceability and sustainability of our infrastructure. A safe and cost efficient maintenance of bridges, cranes, wind towers, tanks, etc. can only be made by improving the understanding and developing tools to better assess the remaining fatigue life. Furthermore, by developing repair and strengthening methods, service life of structures can be extended.

Honors, memberships, scientific community services

Fellow of the American Society of Civil Engineers (ASCE), and the Int. Association for Bridge and Structural Engineering (IABSE)
ECCS Technical Committee « Fatigue », former chairman and full member (1999 – now)
IIW, member of working groups XIII « Fatigue » and XV-E « Tubular structures » (2006 – 2018)
SIA, former chairman and member of scientific committee 263 « Steel structures » (2005 – now)
Steering Committee member of SIA Project “Verstärktes Engagement Erarbeitung Eurocodes 2nd Generation” (2017 – now)
Member of Project Team SC3.T8, revision of Eurocode 1993-1-9 « Fatigue » (2018 – now)
Expert in SC3.WG1, evolution of Eurocode 1993-1-1 « Steel structures » (2018 – now)



Bibliometric indicators

Google Scholar (Feb 2019) h =23,
1863 citations

51 peer-reviewed journal papers

46 conference papers peer-reviewed

2 books

3 book chapters

Also ORCID: 0000-0002-8994-4926

Most important grants since 2011

ULCF of welded joints under variable multi-axial strains (SNF, D-A-CH/LAV, 2013-15)

Multiaxial Fatigue of High Strength Welded Steel Joints (SNF, 2017-19)

Impact of platooning of heavy vehicles on Swiss bridges (OFROU, 2019-21)

Innovation, technology transfer & impact on society

Improved assessment of the safety of hydrocarbon storage tanks against cyclic loadings (2010-2016), spillage risks under control, savings from costly reinforcements

Millau Viaduct, France (2001-2004), expert for the durability of the bridge, bridge built to last much longer than the 78 years of concession agreement

Alinghi race boat (2003), advisor for the maintenance plan, the boat won the America Cup.

Main cooperative work / collaborative projects

(2014-now) with EMPA, Prof. M. Motavalli, Monash Univ., Prof. X.-L. Zhao, and Milano Univ., Prof. P. Colombi, Development of strengthening systems for existing old steel bridges (riveted, no welding allowed), one SNF grant and two CTI projects.

(2018-now) with AALTO Univ. (Fin) and Aarhus Univ. (DK), Profs. H. Remes and H. Yildirim, Damage mechanisms of High Frequency Mechanical Impact (HFMI) Treated Welded Structures under Service Loading to Increase the Fatigue Life for Lightweight Design, MSCA grant.

(2018-now) with Gifu Univ. (JP), Prof. K. Kinoshita, Fatigue strength enhancement of welded joints using 780 MPa class steel, Collaborative research grant, PhD co-advising.

Key publications since 2011

Ghafoori E, Motavalli M, Nussbaumer A, Herwig A, Prinz GS, Fontana M. Design criterion for fatigue strengthening of riveted beams in a 120-year-old railway metallic bridge using pre-stressed CFRP plates. Composites Part B: Engineering 2015;68:1-13. doi:10.1016/j.compositesb.2014.08.026.

Santarsiero M, Louter C, Nussbaumer A. A novel triaxial failure model for adhesive connections in structural glass applications. Engineering Structures 2018;166:195-211. doi:10.1016/j.engstruct.2018.03.058.

Rocha M, Brühwiler E, Nussbaumer A. Fatigue behaviour prediction of steel reinforcement bars using an adapted Navarro and De Los Rios model. International Journal of Fatigue 2015;75:198-204. doi:10.1016/j.ijfatigue.2015.01.015.

Acevedo C, Drezet JM, Nussbaumer A. Numerical modelling and experimental investigation on welding residual stresses in large-scale tubular K-joints. Fatigue & Fracture of Engineering Materials & Structures 2013;36:177-85. doi:10.1111/j.1460-2695.2012.01712.x.

Prinz GS, Nussbaumer A. Fatigue analysis of liquid-storage tank shell-to-base connections under multi-axial loading. Engineering Structures 2012;40:75-82. doi:10.1016/j.engstruct.2012.02.027.



Jean-Louis Scartezzini

Full Professor

Solar Energy and Building Physics Laboratory (LESO-PB)

leso.epfl.ch

MSc Physics (1980, EPFL, Switzerland)

MSc Geophysics (1981, Univ. of Lausanne, Switzerland)

PhD Physics (1986, EPFL, Switzerland)

Keywords

Passive and active solar technologies, daylighting and greenlighting, sustainable building technologies, building and urban simulation, model predictive control, air infiltration and ventilation.

Career trajectory

1988-1989	Postdoc, LBNL & UCLA, California (USA)
1989-1990	Group Leader, Solar Energy Research Group, EPFL
1990-1994	Assoc. Prof., University of Geneva
1994-1997	Assoc. Prof., EPFL & University of Geneva
1994-1997	Co-Director, Inst. of Building Technology, EPFL
1997 to date	Full Professor, EPFL
2002-2009	Director, Inst. of Infrastructures, Resources and Env., EPFL
2002-2009	Director, Doctoral Prog. in Environment, EPFL

Research mission & relevance

Research at the Solar Energy and Building Physics Laboratory focuses on energy efficiency and implementation of renewable energies in buildings and urban districts. Target research areas include: (i) integrated daylighting and electric lighting, (ii) nanotechnologies for solar energy conversion, (iii) urban data mining, intelligence and simulation, (iv) smart buildings and cities and (v) building integration of renewable energies. Research is supported by novel scientific equipment (nanotechnological laboratory, experimental testbeds, daylighting and photobiological laboratory, urban climate monitoring station) and computer modelling software for design, analyses and optimal control of buildings and urban sites.

Honors, memberships, scientific community services

Speaker Steering Committee, [International Daylight Academy](#)

Energy Committee Member, [Swiss Academies of Arts and Sciences](#)

Board Member & WP1 Leader, [SCCER FEED&D](#)

Chairman Research Committee (until 2014), Competence Centre for Energy and Mobility

EPFL Representative (until 2018), [The Association of EU Renewable Energy Research Centers](#)

EPFL Representative (until 2018), [CIB World](#)

Associate Editor, [Solar Energy Journal](#)

Fellow, International Solar Energy Society

Fellow, Illuminating Engineering Society

Fellow, Swiss Society of Engineers and Architects



Bibliometric indicators

[Google Scholar](#) (Feb. 2019)h=32, 4199 citations.

472 peer-reviewed publications (185 since 2011)

9 patents

18 books, 11 book chapters

Most important grants since 2011

SCCER 'Future Energy Efficient Buildings and Districts' (Innosuisse)

NRP 75 Big Data 'Hybrid Renewable Energy Potential for the Built Environment using Big Data' (SNSF)

NEST SolAce Unit for EPFL Researchers 'Perception-based Human Comfort through Multi-Functional Solar Facade and Renewable Energy Integration' (ETH Domain)

Innovation, technology transfer & impact on society

KromatixTM, patented colored solar glazing, thin-film nanocomposites, [SwissINSO](#) (lab spin-off)

Glazing combining mobile phone reception and thermal insulation, laser scribed selective coating, [2019 Watt d'Or](#)

CitySimTM, computer simulation and optimization software for sustainable urban sites, [Kaemco](#) (lab spin-off)

Main cooperative work / collaborative projects

Energy positive and carbon neutral combined office and living space (EPFL, EMPA, HEIA-FR, Lutz Architects)

Innovative fenestration system combining seasonal thermal dynamics, daylighting, glare protection and transparency (EPFL, BASF, Asahi Glass Co.)

Solar urban potential at regional and national scale (EPFL, UNIGE, UNIL, SIG, FSO, Univ. of Oxford)

Key publications since 2011

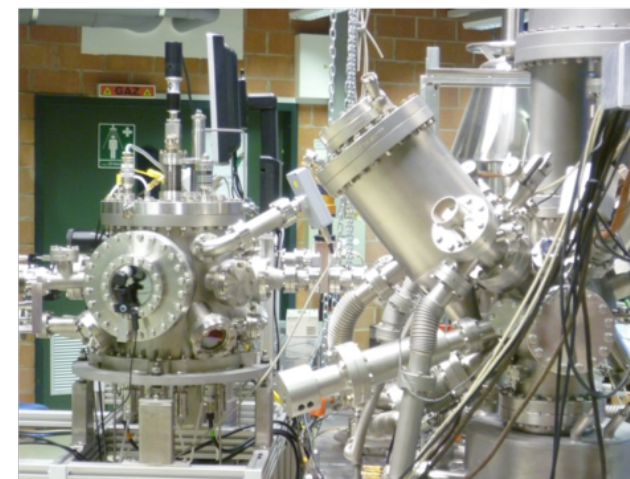
Perera, A.T.D., Coccolo, S., Scartezzini, J.-L., and Mauree, D. (2018). Quantifying the impact of urban climate by extending the boundaries of urban energy modelling. *Applied Energy* 222:847-860. [doi: 10.1016/j.apenergy.2018.04.004](#)

Assouline, D., Mohajeri, N., and Scartezzini, J.-L. (2017). Quantifying rooftop photovoltaic solar energy potential: A machine learning approach. *Solar Energy* 141:278-296. [doi: 10.1016/j.solener.2016.11.045](#)

Maierova, L., Borisuit, A., Scartezzini, J.-L., Jaeggi, S.M., Schmidt, C., and Münch, M. (2016). Diurnal variations of hormonal secretion, alertness and cognition in extreme chronotypes under different lighting conditions. *Nature Scientific Reports* 6, 33591. [doi: 10.1038/srep33591](#)

Paone, A., Sanjines, R., Jeanneret, P., Whitlow, H.J., Guibert, E., Guibert, G., Bussy, F., Scartezzini, J.-L., and Schöler, A. (2015). Influence of doping in thermochromic V1-xWxO2 and V1-xAlxO2 thin films: Twice improved doping efficiency in V1-xWxO2. *J. of Alloys and Compounds* 621:206-211. [doi: 10.1016/j.jallcom.2014.08.264](#)

Wilke, U., Haldi, F., Scartezzini, J.-L., and Robinson D. (2013). A bottom-up stochastic model to predict building occupants' time-dependent activities. *Building and Environment* 60:254-264. [doi: 10.1016/j.buildenv.2012.10.021](#)



Ian F.C. Smith

Full Professor Applied Computing and Mechanics Laboratory (IMAC)

imac.epfl.ch

BASc. Civil Engineering (1978 University of Waterloo, Canada)
PhD. Mechanics & Materials Eng. (1982, University of Cambridge, UK)
Post-Graduate Cert. Artificial Intelligence (1986, EPFL, Switzerland)

Keywords

Applied computing, active structures

Career trajectory

1982-1991	Research Associate, Civil Eng., EPFL
1991- 1996	Scientist, AI Lab, Computer Science Department, EPFL
1996-1999	Assistant Professor, Civil Eng., EPFL
1999-2005	Associate Professor, Civil Eng., EPFL
2001-2006	Head of Structures Institute, EPFL
2005 to date	Full Prof. Civil Eng., EPFL

Research mission & relevance

Our mission is to take advantage of multi-disciplinary synergies in order to study the real behavior civil-engineering structures. We maintain competence in structural mechanics, dynamics, measurement of full-scale structures, materials science and information technology. Comparison of data obtained from measurement systems with simulations improves development of appropriate predictive models thus supporting asset management. Finally, application of information science has been shown to facilitate data management, collaboration between partners, structural control and decision support.

Honors, memberships, scientific community services

Member of the Swiss Academy of Engineering Sciences
Fellow of the American Society of Civil Engineers (ASCE), the Int. Association for Bridge and Structural Engineering (IABSE) and the European Group for Intelligent Computing in Engineering (EG-ICE)
Emeritus Chief Editor, Advanced Engineering Informatics (formerly AI in Engineering), Elsevier
Computing in Civil Engineering Award, ASCE (Only non-US winner)
Information Technology Globalization Award, ASCE
Adjunct Professor, Carnegie Mellon University (2011 – now)
Six best-paper awards
Founder of the European Group for Intelligent Computing in Engineering (1993); hosted 25th annual meeting in June 2018
Technologiestandort Schweiz Prize, CeBit (1997)
Section Chief Editor – Frontiers in Built Environment



Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?hl=en&user=IACSmith) (Feb. 2019) h = 41, 5300 citations

218 peer-reviewed Scopus-indexed publications (94 since 2011)

3 books (not including edited books such as conference proceedings)

Most important grants since 2011

Robust diagnosis and biomimetic control of complex structures (SNSF)

Cyber civil infrastructure (ETH – SEC)
Structural adaptation through large shape changes (SNSF)

Innovation, technology transfer & impact on society

Over twenty full-scale case studies of measurement-data interpretation in Canada, USA, UK, Germany, Switzerland, India, Singapore and Australia

Identification of reserve capacity in over ten bridges in service

First laboratory demonstration that a near-full-scale active structure is able to perform self-diagnosis, self-repair and increase performance with time (learning). Subsequent demonstration also for a deployable structure

Main cooperative work / collaborative projects

Singapore ETH Center «Future Cities Laboratory» Each project phase involved a residency in Singapore of 3, 6 and 3 months spread over the 2nd, 3rd and 4th years plus many shorter visits.

1st Phase (2010-2015) «Improving simulations of wind around buildings» One PhD (D. Vernay) registered at EPFL, One PhD (M. Papadopoulou) registered at NUS; co-supervision with B. Raphael and C. Sekar (NUS). «Bamboo composite reinforcement for structural concrete» one PhD (A. Javadian) registered at ETHZ; co-supervision with D. Hebel (ETHZ). 2nd Phase (2015-2020) «Cyber Civil Infrastructure» Three PhDs (S. Pai, M. Proverbio et N. Bertola) registered at EPFL and two PhDs (W. Cao et Z. Wang) registered at NUS; co-supervision with Prof. C.G. Koh and Prof S.H. Goh (NUS). Recent extension to occupancy detection; one PhD (S. Drira registered at EPFL) with Tectus SA (A Swiss company that is present in Singapore)

Project Associates: A. Whittle (MIT), B. Glisic (Princeton), M. Pozzi (CMU), J. Brownjohn (Exeter), B. Raphael (IITM)

Key publications since 2011

NBH Ali, L Rhode-Barbarigos, IFC Smith (2011) «Analysis of clustered tensegrity structures using a modified dynamic relaxation algorithm», International Journal of Solids and Structures 48 (5), 637-647

B Raphael, and IFC Smith “Engineering Informatics: Fundamentals of Computer-Aided Engineering”, 2nd Edition, John Wiley, 2013, 333p.

JA Goulet, IFC Smith (2013) «Structural identification with systematic errors and unknown uncertainty dependencies» Computers & Structures 128, 251-258

N Veuve, SD Safaei, IFC Smith (2016) «Active control for mid-span connection of a deployable tensegrity footbridge» Engineering Structures 112, 245-255

M Proverbio, NJ Bertola and IFC Smith (2018) «Outlier-detection methodology for structural identification using sparse static measurements» Sensors, 18:6



Anastasios Vassilopoulos



Senior Scientist (MER) Composite Construction Laboratory (CCLab)

cclab.epfl.ch

MSc Mechanical and Aerospace Engineering (1995, University of Patras, Greece)

PhD on Fatigue of composite materials and structures (2001, University of Patras, Greece)

Keywords

Fatigue, life prediction, fracture, composites

Career trajectory

2001-2003	research associate, University of Patras, Greece
2002-2006	Assistant Professor, Technical University of Patras, Greece
2006-2012	Research and Teaching associate, ENAC/IIC/EPFL
2012 to date	Senior Scientist (MER), ENAC/IIC/EPFL

Research mission & relevance

The research focuses on the understanding of the mechanisms leading materials to failure under long-term loadings with a focus to the analysis of advanced composite materials and lightweight structures under realistic loading patterns and damage modes.

The objective is to transfer this knowledge to the engineering society and industry by developing simple engineering tools for the fatigue life assessment and prediction of composite structural elements under complex loading profiles.

This multidisciplinary approach can be applied to applications in different fields, such as in Civil engineering (wind energy, bridge engineering, off-shore wind), in architecture (building), in the automotive industry (structural adhesives), in transportation (lightweight vehicles, containers), and the aerospace domain (composite and hybrid joints).

Honors, memberships, scientific community services

Elected member of the council of;

The European Society of Composite Materials (ESCM)

The European Society for Experimental Mechanics (EURASEM)

Steering committee member of the Joint program Wind in the frame of the European Energy Research Alliance, (EERA)

Member of the management committee (Swiss representative) of the COST actions CA18120 (2019-2023), TU1207 (2013-2017)

Management committee member of the European Structural Integrity Society (ESIS-TC4)

Member of the International Expert Panel evaluating of the Latvian Central Finance and Contracting Agency (CFCA) 2016-today

Editorial board member of the Frontiers in Materials

Bibliometric indicators

[Google Scholar](#)

h-index, (Jan 2019) 24 – 2171 citations

95 peer reviewed journal articles

4 books

50 conference papers

Most important grants since 2011

Progressive fatigue damage

modeling of FRP structural

assemblies – NSF

Composite sandwich bridge decks on fire – NSF

Design Tool for Adhesively Bonded Timber Joints – NSF

Innovation, technology transfer & impact on society

CCfatigue software – development of numerical tools for the fatigue life prediction of composite materials and structures

Avançon Bridge – Composite sandwich vehicular bridge (with 3A Composites)

Main cooperative work / collaborative projects

NSF project “Impact of experimentally-derived lightning waveforms on mechanical performance of composite structures” 2016-2020 with EPFL/STI/FR Prof. Farhad Rachidi.

COST Action TU1207 on the next generation design guidelines for composites in construction (2012-2016)

COST Action CA18120 – Reliable roadmap for certification of bonded primary structures (2019-) in collaboration with the DELFT University of Technology

Summer Course – Fatigue and Failure Analysis of Composite Structures (collaboration with TUDELFT, NL, UGENT, BE, University of Porto, PT, and University of Patras, GR)

Global Initiative on Academic Networks (GIAN) Program on Fatigue of Composite Materials – Short course (Collaboration with IIT Jalandhar, Punjab, India) (2019)

Key publications since 2011

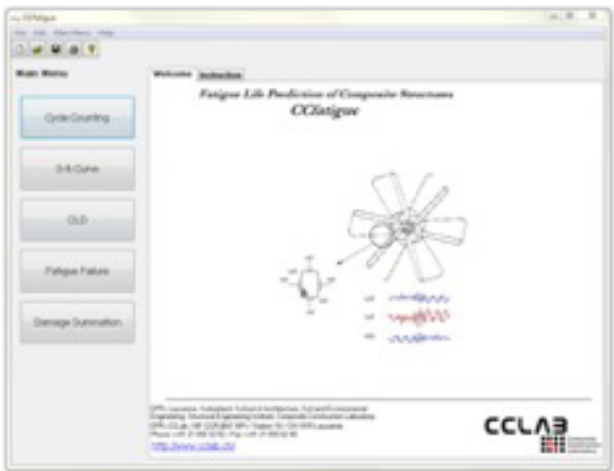
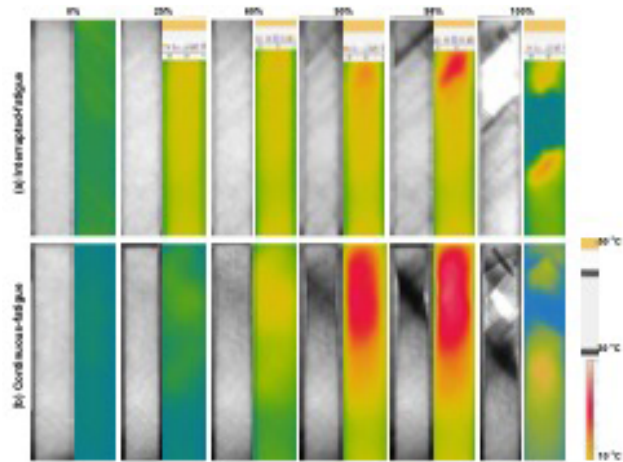
A. P. Vassilopoulos, T. Keller, “Fatigue of fiber reinforced composites” Springer Verlag, 2011

M. Savvilitidou, T. Keller, A. P. Vassilopoulos. “Fatigue performance of a cold-curing structural epoxy adhesive subjected to moist environments” Int. J. Fatigue, 2017;103:405-414, doi.org/10.1016/j.ijfatigue.2017.06.022

V Movahedi-Rad, T. Keller, A. P. Vassilopoulos. “Interrupted tension-tension fatigue behavior of angle-ply GFRP composite laminates” Int. J. fatigue, 2018;113:377-388, doi.org/10.1016/j.ijfatigue.2018.05.001

V Movahedi-Rad, T. Keller, A. P. Vassilopoulos. “Fatigue damage in angle-ply GFRP laminates under tension-tension fatigue” Int. J. Fatigue, 2018;109 :60-69, doi.org/10.1016/j.ijfatigue.2017.12.015

X. Chen, A. Smorgonskiy, J. Li, A. P. Vassilopoulos, M. Rubinstein, F. Rachidi. “Nonlinear electrical conductivity through the thickness of multidirectional carbon fiber composites” J Mater. Sci, 2019;54(5):3893-39003, doi.org/10.1007/s10853-018-3127-1



Marie Violay

Assistant Professor, Tenure Track
Laboratory of Experimental Rock Mechanics (LEMR)

lemr.epfl.ch

BA: Geology (2005, University of Lyon 1, France)

MA: Geophysics (2007, University of Montpellier, France)

PhD Rock mechanics (2011, University of Montpellier, France)

Keywords

Rock mechanics, Rock physics.

Career trajectory

2011-2013 Postdoc researcher, INGV, Italy

2013-2015 Lecturer, ETHZ, Switzerland

2015-2019 Assistant professor tenure track, EPFL, Switzerland

Research mission & relevance

The objective of the Laboratory of Experimental Rock Mechanics (LEMR) is to provide a better understanding of the couplings between upper-crust mechanics and fluid movements. The evaluation of the coupled hydro-mechanical processes in high/low porosity rocks has a prime importance for: underground nuclear waste disposal, geothermal energy extraction, gas/oil recovery, carbon dioxide sequestration in deep reservoirs or yet for the landslides and earthquakes-related hazards. It has also strong implication in engineering geology topics such as tunnelling and underground constructions.

Honors, memberships, scientific community services

EMRP Division Outstanding Early Career Scientists. Award of the European Geosciences Union.

EPFL teaching Award in Civil Engineering

American Geophysical Union, Member

European Geoscience Union, Member

Swiss Academy of Sciences (SCNAT), Member

Representative of the Swiss geophysical commission / Switzerland

Associated Editor: Frontiers in Geosciences

Guest Editor : GETE



Bibliometric indicators

Google Scholar (Jan. 2019) h = 12,

383 citations

26 peer-reviewed publications

Most important grants since 2011

ERC starting grant (BEFINE):

mechanical BEhavior of Fluid

Induced Earthquake.

SNF/ AP ENERGY grant:

Hydro-Mechanical Couplings in

Enhanced Geothermal Reservoir

SNF/ R'equip: High Speed

Temperature and Pressure and Strain

Apparatus.

Innovation, technology transfer & impact on society

FRICION: Fault behavior during Co2 sequestration: Gaznat

EDGAR: Effect of fluid viscosity during hydraulic injections in deep geothermal reservoir: OFEN

Main cooperative work / collaborative projects

HIGHSTEPS : HighSpeedTemperature Pressure and Strain (ETHZ, SED)

TARGET : Triaxial Apparatus for Geothermal Energy. Germain de Stael (ENS Paris)

Key publications since 2011

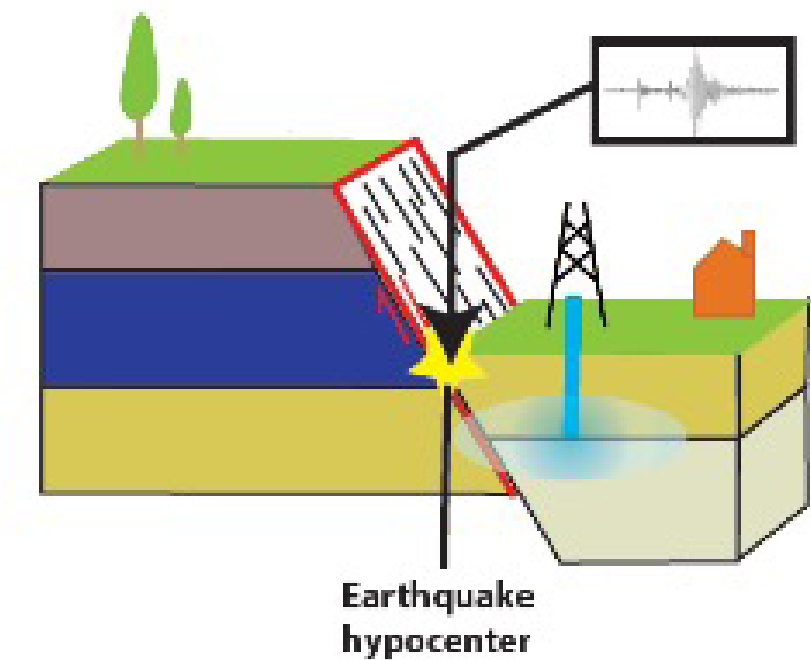
Time-dependent deformations of sandstone during pore fluid pressure oscillations: implications for natural and induced seismicity C Noël, L Pimienta, M Violay Journal of Geophysical Research: Solid Earth

Dynamic weakening during earthquakes controlled by fluid thermodynamics M Acosta, FX Passelègue, A Schubnel, M Violay Nature communications 9 (1), 3074

Do scaly clays control seismicity on faulted shale rocks? LF Orellana, MM Scuderi, C Collettini, M Violay Earth and Planetary Science Letters 488, 59-67

Frictional properties of Opalinus Clay: Implications for nuclear waste storage LF Orellana, MM Scuderi, C Collettini, M Violay Journal of Geophysical Research: Solid Earth 123 (1), 157-175

Porosity evolution at the brittle-ductile transition in the continental crust: Implications for deep hydro-geothermal circulation M Violay, MJ Heap, M Acosta, C Madonna Scientific reports 7 (1), 770



Laurent Vulliet



Full Professor Laboratory of Soil Mechanics (LMS)

lms.epfl.ch
Dr ès Sc. Tech. (Ph.D.) EPFL, 1986
MS, Civil Engineering, ETHZ, 1980
INSEAD Advanced Management Program, 2008
Swiss Board School Diploma, 2016

Keywords

Design and testing of geostructures. Behavior of geomaterials and numerical modeling. Risk Management. Governance

Career trajectory

1994 to date	Full professor EPFL (Assoc. until 1996) - Part time (20% since 2008, 50% since 2018) - Chairman, Quartier Nord EPFL, since 2018 - Dean ENAC 2001-2008 - Head Civil Eng. Dept 1999-2001 - Head Lab. of Soil Mechanics 1994-2008
2016 to date	Board Member, Implenia (Revenue over 4 billion CHF)
2015 to date	Independent consultant and Board member
2008-2015	CEO, Partner and BoD, BG Consulting Engineers, Lausanne
1989-1993	Senior Engineer, De Cérenville Géotechnique SA, Ecublens
1986-1989	Lecturer, University of Arizona, Tucson, USA

Research mission & relevance

I was heading the Soil Mechanics Lab until 2008 (now Prof. Laloui) when I produced most of the research contribution of my group on advanced soil mechanics. From 2008 to 2015 as CEO of a large international engineering company, with a 20% appointment at EPFL, my activities were limited to teaching. Since 2016, my appointment is joined between ENAC (30%) and EPFL President's Office (20%). My present research activities focus on risk management and automated design (AI).

Honors, memberships, scientific community services

2014 to date	Member, Swiss Academy of Engineering Sciences (SATW)
2014-2017	Member, Energy commission (COMEN), Canton of Vaud, Lausanne.
2009-2013	Vice-President, Swiss Society of Engineers and Architects (SIA), Zurich.
2003-2008	Foundation Council Member, Stiftungsrat der Präventionsstiftung der KGV, Bern.
2000-2004	Member, WSL Advisory Committee, Swiss Fed. Inst. for Forest, Snow and Landsc. Res. (WSL), Birmensdorf.
1997-2007	Member, Swiss Extra-Parliamentary Commission on Natural Disasters (PLANAT), Bern.

Bibliometric indicators

Web of Science (March 2019):
H-index=19, 1071 citations
Google scholar (March 2019):
H-index = 24, 1989 citations
Over 100 peer reviewed papers
15 books and book chapters

Most important grants since 2011

(No research activity 2008-2018, please read lhs)

2019: Hasler Foundation. "OptiSoil: Optimization of support system for urban deep excavations with machine learning techniques"

Innovation, technology transfer & impact on society

As CEO of BG Consulting Engineer, introducing new technologies and developing the company internationally from 250 to 700 engineers.

Advanced modeling and introducing new technologies and innovation in construction industry.

Multiple media appearance on the role of engineering.

Honors, memberships, scientific community services (continued)

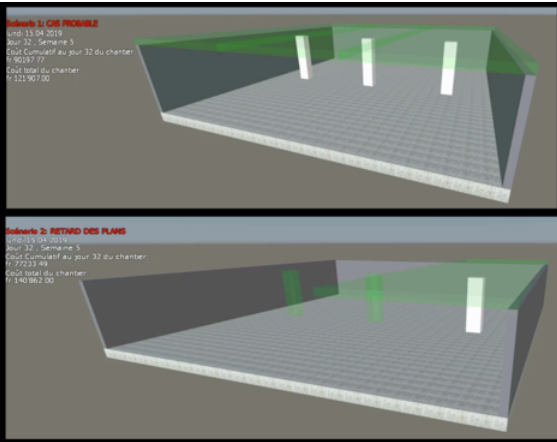
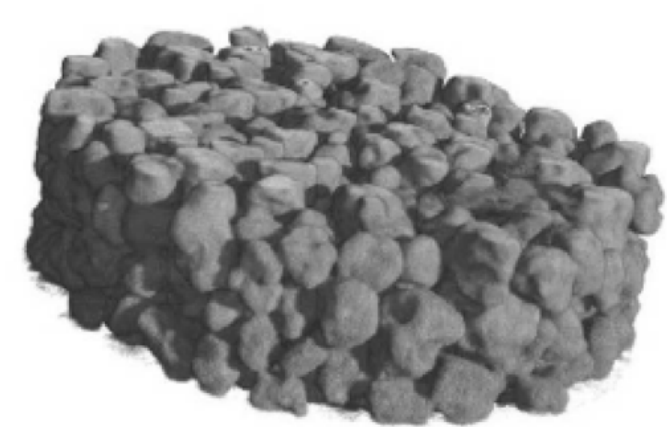
1997 - 2007:	Member of the Scientific Advisory Committee, Centro Stefano Franscini (CSF), Monte Verità, Tessin.
1996 - 2003:	Member of the Foundation Council and of the Electoral Commission, Swiss National Science Foundation (NSF), Bern.
1995 - 2009:	Member of the Board, Alliance of European Research Laboratories (ALERT), Grenoble.

Main cooperative work / collaborative projects

"Risk Management in BIM 5D", with Implenia and Prof. Cache, 2019
"National Survey on Risk Management in Civil Eng. Firms", with USIC, 2019
"Natural hazards and characterization of building vulnerability", with ECA VD

Key publications since 2011

Vulliet, L., Laloui, L., Zhao, J. Mécanique des sols et des roches, Presses Polytechniques et Universitaires Romandes (PPUR), Lausanne, 600 p., 2016
Vulliet, L. Instability of soil masses. In: Environmental Geomechanics, 2010, p. 73-91. London: ISTE-Wiley
Obrzud R. F., Truty A. and Vulliet L., Numerical modeling and neural networks to identify model parameters from piezocone tests: I. FEM analysis of penetration in two-phase continuum, in International Journal For Numerical And Analytical Methods In Geomechanics, vol. 35, p. 1703-1730, 2011.
Obrzud R. F., Truty A. and Vulliet L., Numerical modeling and neural networks to identify model parameters from piezocone tests: II. Multi-parameter identification from piezocone data, in International Journal for Numerical and Analytical Methods in Geomechanics, 2011
Plumey S., Muttoni A., Vulliet L., Labiouse V. Analytical and numerical analyses of the load-bearing capacity of retaining walls laterally supported at both ends. International Journal for numerical and analytical methods in geomechanics, vol. 35, num. 9, p. 1019-1033, 2011.



Yves Weinand

Associate Professor Laboratory for Timber Constructions (IBOIS)

ibois.epfl.ch

MSc Architecture with distinction (1986, Institut Supérieur d'Architecture, Liège, Belgium).

MSc Civil Engineering (1994, EPFL)

PhD, Mechanics with great distinction (1998, RWTH Aachen)

Keywords

timber engineering ; timber construction ; shell and spatial structures ; structural and architectural design ; digital fabrication ; new timber derived products ; sustainable building processes in architecture ; robotic fabrication

Career trajectory

1989 to date	Independent Architect, Liège, Belgium
1995 to date	Principal, Bureau d'études Weinand, ingénierie et architecture SPRL Liège, Belgium
2001-2004	Full professor, TU Graz, Austria. Director Institute of structures.
2002-2003	Visiting Professor, EPFL
2004 to date	Associate professor and director of IBOIS Laboratory EPFL, Lausanne.
2017 to date	Principal, Yves Weinand Architectes, Sàrl, Lausanne

Research mission & relevance

Research carried out at IBOIS aims to provide answers to one of the main architectural challenges of our time, namely sustainable architecture. With growing awareness of the need to use renewable materials in building construction, timber has been increasingly popular among researchers, architects and engineers. In fact, its use allows to satisfy the demand of contemporary architecture as well as the requirements for sustainable construction. Latest developments and innovations in this domain have shown high potential for the design of a new generation of timber structures. Integral mechanical attachments inspired by traditional woodworking joints allow the assembly of timber panels without mechanical fasteners or adhesive bonding. Digital fabrication, scanning processes and parametric geometries open up new applications of raw sawn timber elements.

Honors, memberships, scientific community services

1987	Bridge for the future, Shinkenshiku, Japan, First Prize
1989	Samarkand Center, Uzbekistan, Second Prize
1996	Pedestrian Bridge, Liège, Belgium, First Prize
2000	Super C, Aachen, First Prize
2006	Museum for Photography, Charleroi, Belgium, First Prize
2006	Cultural Center, Soignies, Belgium, First Prize
2008	Ice Skate, Liège, Belgium, First Prize



Bibliometric indicators

58 journal papers (23 since 2011)

46 conference papers (23 since 2011)

19 book chapters (16 since 2011)

7 books (5 since 2011)

Most important grants since 2011

NCCR, National Center of Competence in Digital Fabrication (dfab)

(2014 – 2026), Swiss National Science Foundation in the field of architecture : ongoing thesis and oncoming postdocs.

OFEV: (2017) Wood Pavilion of the Vidy Theatre

Innovation, technology transfer & impact on society

Nabucco opera (2018): Technology transfer of Snap-Fit Joints

Vidy Pavilion (2017): First double layered and double curved folded plate structure with wood wood connections

Friction welded cross laminated timer panels (2014): proof of concept

Honors, memberships, scientific community services (continued)

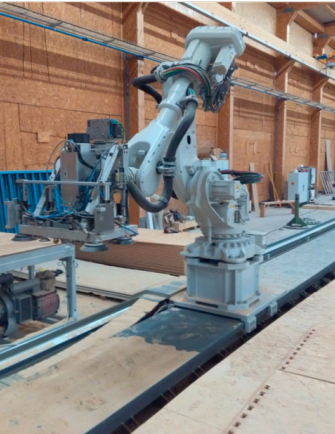
2009	Parliament Building, Lausanne, First Prize
2015	Watertower, Brussels, First Prize
2012	Grand Prix de l'architecture de Wallonie
2017	Silver Medal, Distinction Académie de l'architecture, Paris
2015 to date	Member Cedotec (Lignum Switzerland)
2014 to date	Board member Steering committee NCCR. Principal investigator
2013 to date	Board member of S-WIN (Swiss-Wood Innovation Network)

Main cooperative work / collaborative projects

- Collaboration (SNF, NCCR) with ETHZ (Prof. Philippe Block) (2017-present) Integrative Computational Framework for Complex Timber Geometries. COMPAS is an open-source, Python-based computational framework for collaboration and research in architecture, engineering and digital fabrication.
- Collaboration (SNF, NCCR) with ETHZ (Prof. Matthias Kohler) (2015-present) Robotic assembly of inter-connected timber plates using Integral Mechanical Attachment technique.
- Collaboration (SNF, NCCR) with EPFL (Prof. Mark Pauly) (2018-present) Computational Methods aims to develop new optimisation algorithms and data structures for architectural design and robotic construction execution, support effective software design for domain experts using novel high-level interfaces
- Collaboration with ENSTIB, Epinal, (Prof. Jean-François Bocquet) Prefabricated Structural Timber Elements using Wood-Wood Connections
- Collaboration with ANNEN PLUS SA: constructing a multipurpose Hall in Manternach
- Collaboration with the municipality of Rossinière: constructing a Centre d'Activité Gare Grand Chalet
- Collaboration with MOBIC SA, Belgium: development of robotic control software allowing for the specific assembly of timber panels using integral mechanical attachments.

Key publications since 2011

- Gamerro, J., Robeller, C., and Weinand, Y. (2018) 'Rotational mechanical behaviour of wood-wood connections with application to double-layered folded timber-plate structure', *Construction and Building Materials*, 20 March 2018, Volume 165, pp. 434-442.
- A. Stitic, A., Robeller, C., and Weinand, Y. (2018) 'Experimental investigation of the influence of integral mechanical attachments on structural behaviour of timber folded surface structures', *Thin-Walled Structures*, January 2018, Volume 122, pp. 314-328.
- Weinand, Y. (2016), *Advanced Timber Structures - Architectural Designs and Digital Dimensioning*, Basel: Birkhäuser.



Environmental Engineering Institute (IIE)

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Alfred Johnny Wüest - Physics of Aquatic Systems Laboratory; Margaretha Kamprad Chair (APHYS)	160

D. Andrew Barry

Full Professor Ecological Engineering Laboratory (ECOL)

ecol.epfl.ch
BA Mathematics (1979, University of Queensland, Australia)
BSc Environmental Physics (1981, Griffith University, Australia)
PhD Porous Media (1986, Griffith University, Australia)

Keywords

Subsurface hydrology, coastal aquifers, environmental process-based models, lake hydrodynamics, open-source field measurement systems, urban water quality, soil erosion, hyporheic zone

Career trajectory

1985-1986	Postdoc, Environmental Sci., VPI&SU
1986-1988	Postdoc, UC Riverside
1989-1998	Lecturer, Assoc. Prof., Univ. of Western Australia
1998-2005	Full Professor, Environ. Eng., Univ. of Edinburgh
2005 to date	Full Professor, EPFL
2008-2010	Director, Environmental Eng. Institute, EPFL
2017 to date	Director, Environmental Eng. Institute, EPFL
2018 to date	Dean a.i., ENAC, EPFL

Research mission & relevance

The group's mission is to develop better understanding of processes relevant to environmental quality of soil and water resources. In the post-2011 period, target research areas included: (i) controls on soil water remediation, (ii) urban water quality, (iii) soil erosion and (iv) climate-induced changes in the energy status of large inland lakes. These targets necessitated a combination of methodologies (experimental, modeling, field measurements), as well as motivated new hardware/software solutions to different field measurement challenges.

Honors, memberships, scientific community services

Research Council Member, [Swiss National Science Foundation](#)
Expert Evaluator, [UFZ](#)
Editor (now honorary editor), [Advances in Water Resources](#)
Corresponding Fellow, [Royal Society of Edinburgh](#)
Fellow, [American Geophysical Union](#)
Fellow, [Institution of Civil Engineers](#)
Fellow, [Institute of Mathematics and its Applications](#)



Bibliometric indicators

[Google Scholar](#) (Mar.. 2019) h = 55,
11934 citations

342 peer-reviewed publications
(104 since 2011)

1 book

Most important grants since 2011

Variability of mesoscale surface energy flux in a large lake (SNSF)

Cascading density currents from the Petit Lac to the Grand Lac of Lake Geneva (SNSF)

Physical mechanisms of soil erosion: Modelling and validation (SNSF)

Innovation, technology transfer & impact on society

Open source hardware:
Autonomous, on-water, BVLOS-ready, fixed-wing [drone](#)

Real-time [detection](#) of floating objects in lakes

Automated, remotely controlled [imaging](#)

Main cooperative work / collaborative projects

Subsurface processes in the hyporheic zone (Hohai University, Nanjing, China)
Physical mechanisms of soil erosion under shallow overland flow (EPFL, Loughborough University, UK)
Mixing processes, sediment and energy transfers in large inland lakes (EPFL, Eawag, TU Vienna)

Key publications since 2011

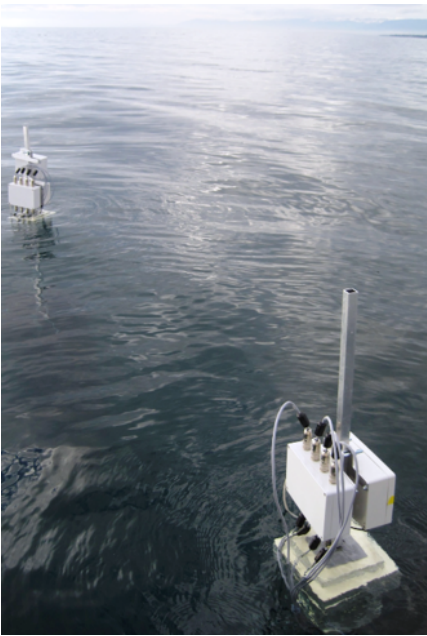
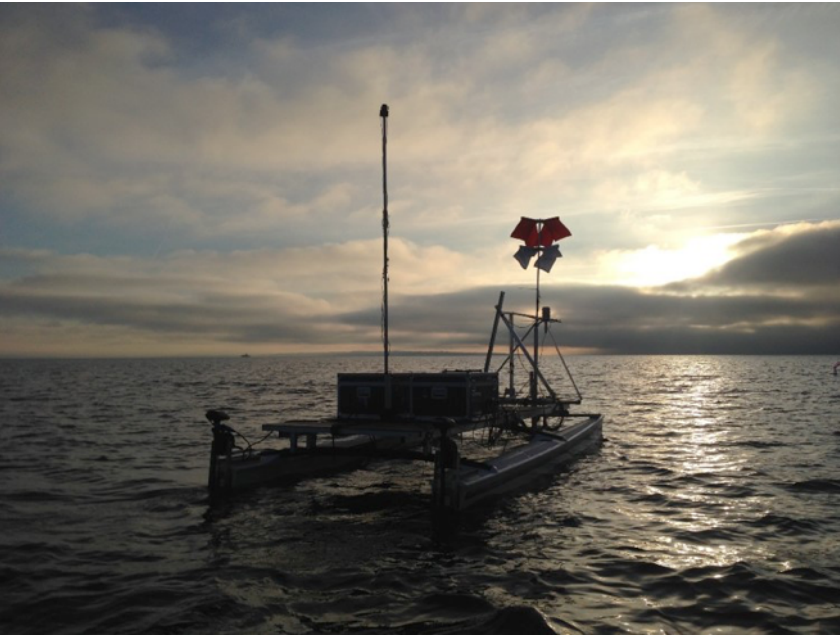
Cheraghi, M., Rinaldo, A., Sander, G.C., Perona, P., and Barry, D.A. (2018). Catchment drainage network scaling laws found experimentally in overland flow morphologies. *Geophysical Research Letters* 45(18):9614–9622. doi: [10.1029/2018GL078351](https://doi.org/10.1029/2018GL078351)

Cimatoribus, A.A., Lemmin, U., Bouffard, D., and Barry, D.A. (2018). Nonlinear dynamics of the near-shore boundary layer of a large lake (Lake Geneva). *Journal of Geophysical Research: Oceans* 123:1016–1031. doi: [10.1002/2017JC013531](https://doi.org/10.1002/2017JC013531)

Jin, G., Tang, H., Li, L., and Barry, D.A., (2015). Prolonged river water pollution due to variable-density flow and solute transport in the riverbed. *Water Resources Research* 51(4):1898–1915. doi: [10.1002/2014WR016369](https://doi.org/10.1002/2014WR016369)

Xin, P., Wang, S.S.J., Robinson, C., Li, L., Wang, Y.-G., and Barry, D.A. (2014). Memory of past random wave conditions in submarine groundwater discharge. *Geophysical Research Letters* 41:2401–2410. doi: [10.1002/2014GL059617](https://doi.org/10.1002/2014GL059617)

Margot, J., Kienle, C., Magnet, A., Weil, M., Rossi, L., de Alencastro, L.F., Abegglen, C., Thonney, D., Chèvre, N., Schärer, M., and Barry, D.A. (2013). Treatment of micropollutants in municipal wastewater: Ozone or powdered activated carbon? *Science of the Total Environment* 461–462:480–498. doi: [10.1016/j.scitotenv.2013.05.034](https://doi.org/10.1016/j.scitotenv.2013.05.034)



Tom J. Battin

Full Professor
Stream Biofilms and Ecosystem Research Laboratory (SBER)

sber.epfl.ch

MSc, Zoology, 1991, University of Vienna

PhD, Ecology, 1998, University of Vienna

Keywords

Aquatic ecosystems, alpine streams, ecohydraulics, biogeochemistry, microbial ecology, biofilms

Career trajectory

2014 to date	Director of SBER Laboratory, EPFL
2012 - 2014	Head of the Department of Limnology and Oceanography, University of Vienna
2013 Visiting	Professor at the Universität für Angewandte Kunst Wien
2009 to 2014	Chair of Limnology, University of Vienna
2009 Visiting	Professor, Uppsala University
2007 to 2009	Associate Professor, Department of Limnology, University of Vienna
2005 to 2007	Assistant Professor, Department of Limnology, University of Vienna
2005 to 2014	Junior Group Leader at WasserCluster Lunz GmbH, Austria
1998 -2005	Various postdocs in the USA, Spain and Austria

Research mission & relevance

Owing to global change, the numerous ecosystem functions and services that streams fulfill are threatened. At the same time, we recognize that inland waters, especially streams, are as important in the global carbon cycle as oceans are. Our research mission is to understand the coupled physical, chemical and ecological processes that drive stream ecosystem functions and services, including biodiversity, and that make streams so important for global biogeochemical cycles. Our works integrates experiments with environmental sensor networks, large spatial surveys, modeling and bioinformatics.

Honors, memberships, scientific community services

TART Price Awardee, 2008

Ramon y Cajal Fellowship, 2003

Erwin Schrödinger Fellowship, 1999

Associate Editor of npj Biofilms and Microbiomes

Associate Editor of Biogeosciences

Associate Editor of Aquatic Microbial Ecology

Member of the AFR Panel, Fonds National de la Recherche Luxembourg (2011 to 2015)

President of the Austrian Society of Limnology (2008-2010)

Member of the ASLO Lifetime Achievement Award committee



Bibliometric indicators

Google scholar (Jan. 2018):

h = 38, 6814 citations, 93 peer reviewed papers

Most important grants since 2011

Elucidating the success of microbial biofilms and their implications for habitability and ecosystem

evolution in glacial floodplain streams (ENSEMBLE). SNF Sinergia (2.3 M CHF)

Vanishing glaciers: What else besides water do we lose? The NOMIS Foundations (2.8 M CHF)

Metabolic regimes in Alpine stream networks (METALP). SNF (630 KCHF)

Main cooperative work / collaborative projects

2018-2022: Vanishing Glaciers, The NOMIS Foundation, EPFL, University of Luxembourg, Montana State University

2019-2022: SNF Sinergia: EPFL, UNIL, UNILUX, ETHZ

2015-2018 Involvements in three ITNs.

Key publications since 2011

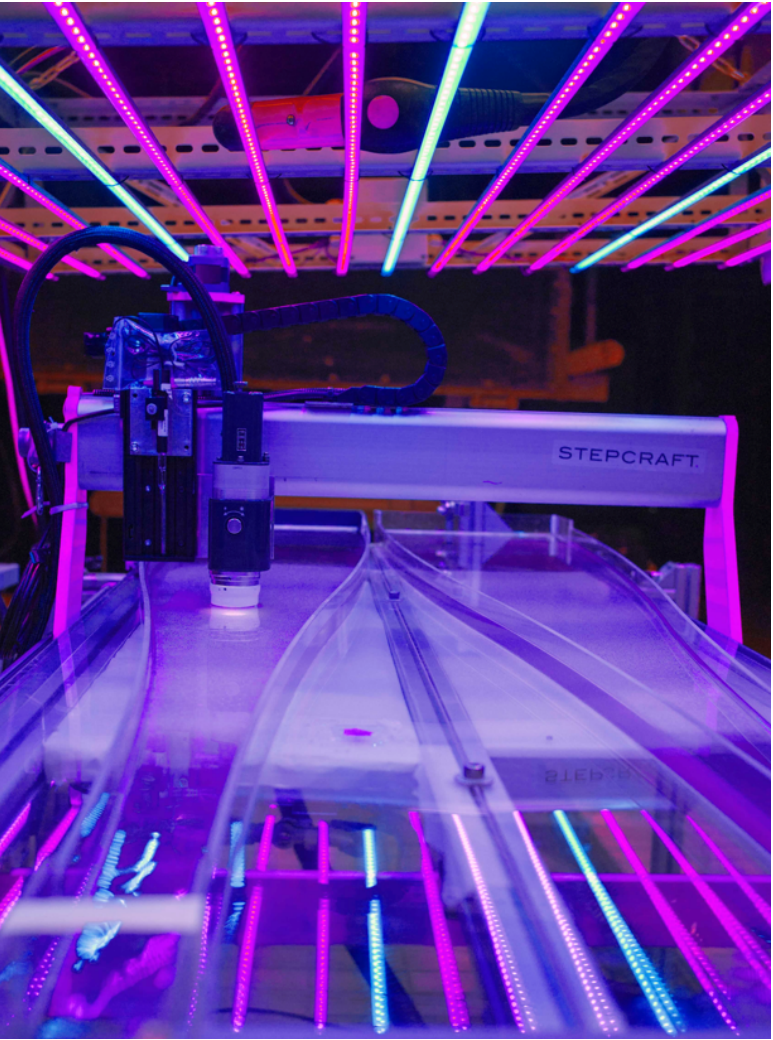
Ulseth et al. 2019. Regime shift of gas transfer velocities from low- to high-energy streams. Nature Geoscience (in press)

Niederdorfer R et al. 2016. Attached biofilms and suspended aggregates are distinct microbial lifestyles emanating from differing hydraulics. Nature Microbiology, doi:10.1038/nmicrobiol.2016.178.

Battin TJ, et al. 2016. The ecology and biogeochemistry of stream biofilms. Nature Reviews Microbiology, 14, 251-263.

Widder S et al. 2014. Fluvial network organization imprints on microbial co-occurrence networks. Proceedings of the National Academy of Sciences doi/10.1073/pnas.1411723111.

Singer GA. 2012. Biogeochemically diverse organic matter in glaciers subsidises downstream metabolism in the European Alps. Nature Geoscience doi:10.1038/NCEO1581.



Alexis Berne

Associate Professor Environmental Remote Sensing Laboratory (LTE)

lte.epfl.ch
MSc Environmental Engineering (1998, ENSHMG, now ENSE3, Institut National Polytechnique de Grenoble, France)
PhD Radar Hydrology (2002, Université Joseph Fourier, Grenoble, France)

Keywords

Radar meteorology, precipitation microphysics, mountainous and polar precipitation, geostatistics, numerical and stochastic modelling.

Career trajectory

2003 - 2006	Postdoc at Wageningen University, The Netherlands
2006 - 2013	Tenure-track assistant professor, Environmental Engineering Institute, ENAC, EPFL
2013 to date	Associate professor, Environmental Engineering Institute, ENAC, EPFL

Research mission & relevance

The Environmental Remote Sensing Laboratory focuses on the variability and the microphysics of precipitation in mountainous and polar regions, key features of a crucial phenomenon at the interface of many facets of environmental science and engineering.

Combining in-situ and remotely sensed (primarily radar) observations with statistical analyses and numerical simulation techniques, our goal is to understand the complex interactions between the atmospheric dynamics, the terrain and the microphysical processes governing precipitation formation and evolution, in the cold mountainous and polar environments.

Honors, memberships, scientific community services

2018	Korean Meteorological Administration Award.
2015	NASA Agency Group Achievement Award (GPM Post-Launch Team).
2014	NASA Goddard Space Flight Center Robert H. Goddard Award (GPM GV Team).
2002	Henri Milon Hydrology Award from the Société Hydrotechnique de France (for PhD dissertation).
2009-2015	Associate Editor for Water Resources Research.
2010	Member of the Remote Sensing and Atmosphere Commissions of the Swiss National Academy of Sciences.
2012-2016	Deputy and chair of the AGU Hydrology Precipitation Technical Committee.
2012	Precipitation Measurement Missions Science Team (NASA).



Bibliometric indicators

80 peer-reviewed publications (63 since 2011)
Web of Science: 1642 citations (1508 since 2011), h=22
Google Scholar: 2493 citations (2202 since 2011), h=29

Most important grants since 2011

Riming in mountainous and Antarctic precipitation, SNSF.

Creating the next generation of 3D simulation means for icing, EU-Horizon2020.

Applied research and innovation in radar meteorology, MeteoSwiss.

Innovation, technology transfer & impact on society

French Patent #0901835 (2009) and European Patent #10159024.8 (2010): Estimation of particle size in precipitation using dual-polarization microwave links.

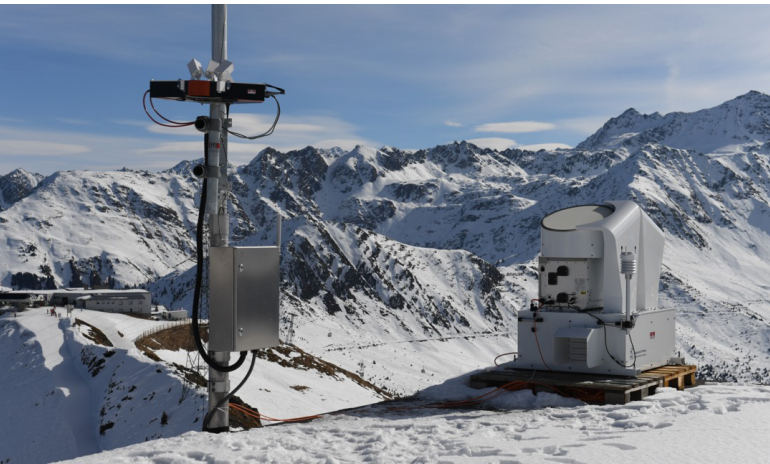
Technology transfer (processing and retrieval algorithms) to operational applications through a close collaboration with MeteoSwiss.

Main cooperative work / collaborative projects

Hydrological cycle in the Mediterranean Experiment project ([HyMeX](#))
Antarctic Precipitation: Remote Sensing from Surface and Space ([APRES3](#))
International Collaborative Experiments for Pyeongchang 2018 Olympic and Paralympic Winter Games ([ICE-POP 2018](#))

Key publications since 2011

Raupach, T., M. Thurai, V. Bringi and A. Berne: Reconstructing the drizzle mode of the raindrop size distribution using double-moment normalization. Journal of Applied Meteorology and Climatology, vol.58 (1), pp. 145–164, doi: 10.1175/JAMC-D-18-0156.1
Besic, N., J. Gehring, C. Praz, J. Figueras i Ventura, J. Grazioli, M. Gabella, U. Germann and A. Berne, 2018: Unraveling hydrometeor mixtures in polarimetric radar measurements. Atmospheric Measurement Techniques, vol. 11(8), pp. 4847-4866, doi: 10.5194/amt-11-4847-2018
Grazioli, J., J.-B. Madeleine, H. Gallée, R. M. Forbes, C. Genthon, G. Krinner and A. Berne, 2017: Katabatic winds diminish precipitation contribution to the Antarctic ice mass balance. Proceedings of the National Academy of Sciences, doi: 10.1073/pnas.1707633114
Grazioli, J., G. Lloyd, L. Panziera, C. Hoyle, P. Connolly, J. Henneberger and A. Berne, 2015: Polarimetric radar and in situ observations of riming and snowfall microphysics during CLACE 2014. Atmospheric Chemistry and Physics, vol. 15(23), p. 13787-13802, doi: 10.5194/acp-15-13787-2015
Schleiss, M., S. Chamoun and A. Berne, 2014: Non-stationarity in intermittent rainfall: the “dry drift”. Journal of Hydrometeorology, vol. 15(3), pp.1189-1204, doi: 10.1175/JHM-D-13-095.1



Rizlan Bernier-Latmani

Associate Professor Environmental Microbiology Laboratory (EML)

eml.epfl.ch

BS Natural Resources (1993, Cornell University, USA)

MSc Civil and Environmental Engineering (1995, Stanford University, USA)

PhD Civil and Environmental Engineering (2001, Stanford University, USA)

Keywords

Geomicrobiology, metal contaminants, bioremediation, elemental cycling, uranium, arsenic, chromium, nuclear waste disposal, gut microbiota, bile acids, 7-dehydroxylation, TGR5.

Career trajectory

2001 – 2005	Postdoc, Scripps Institution of Oceanography, La Jolla, USA
2005 – 2013	Tenure-track assistant Professor, Environmental Engineering Institute, EPFL
2013 to date	Associate Professor Environmental Engineering Institute, EPFL

Research mission & relevance

The focus at EML is twofold. First, the lab aims at constructing a coherent picture of geomicrobiological processes by integrating information gathered at various scales and using various techniques. The ultimate goal is to translate laboratory results to the field to inform bioremediation technologies, further our understanding of fundamental biogeochemical cycles, and help design geological nuclear waste repositories. The second part of the lab is focused on microbial processes in the gut and their transformation of endogenous compounds (bile acids) as well as contaminants (e.g., arsenic). We take a mechanistic approach, linking specific processes to taxa and investigating the environmental and host-derived controls on these metabolisms. Ultimately, these investigations are intended to inform strategies to alter or harness the microbial activity for a specific therapeutic goal.

Honors, memberships, scientific community services

European Association of Geochemistry (EAG) Councillor: since 2017.

Associate Editor for Frontiers in Microbiological Chemistry: since 2010.

Associate Editor Journal of Hydrology: from May 2013 to Dec 2015.

Diamond Light Source Peer Review Panel from: Sept 2014-May 2018.

External expert on Faculty search committee at the University of Vienna (2012).



Bibliometric indicators

[Web of Science](#) (February 2019)

h = 27, 2222 citations

66 peer-reviewed publications
(45 since 2011)

Most important grants since 2011

Uranium Isotope Fractionation: a novel biosignature to identify microbial metabolism on early Earth, ERC consolidator grant.

Bile acid 7-dehydroxylating bacteria in the gut and their link to health and disease, Sinergia, SNSF.

Stanford Synchrotron Radiation Laboratory Scientific Focus Area, US DOE.

Innovation, technology transfer & impact on society

New concept for including microbial processes in the design of nuclear waste disposal repositories

Pilot scale demonstration of the feasibility of bioremediation for the removal of chromate from groundwater.

Main cooperative work / collaborative projects

Uranium isotope fractionation: Stefan Weyer (Leibniz University in Hannover) and Minori Abe (Tokyo Metropolitan Institute) 2014-present

Arsenic mobility in Mekong Delta sediments (Prof. Phu Le Vo, Ho Chi Minh City University of Technology) 2013-present

Microbial transformation in the gut (Prof. Siegfried Hapfelmeier, University of Bern) 2013-present

Key publications since 2011

Bargar, J.R., Williams, K.H., Campbell, K.M., Long, P.E., Stubbs, J.E., Suvorova, E.I., Lezama-Pacheco, J.S., Alessi, D.S., Stylo, M., Webb, S.M., Davis, J.A., Giammar, D.E., Blue, L.Y., and R. Bernier-Latmani. (2013) Uranium redox transition pathways in acetate-amended sediments. *Proceedings of the National Academy of Sciences of the United States of America*, v110, 12, 4506-4511.

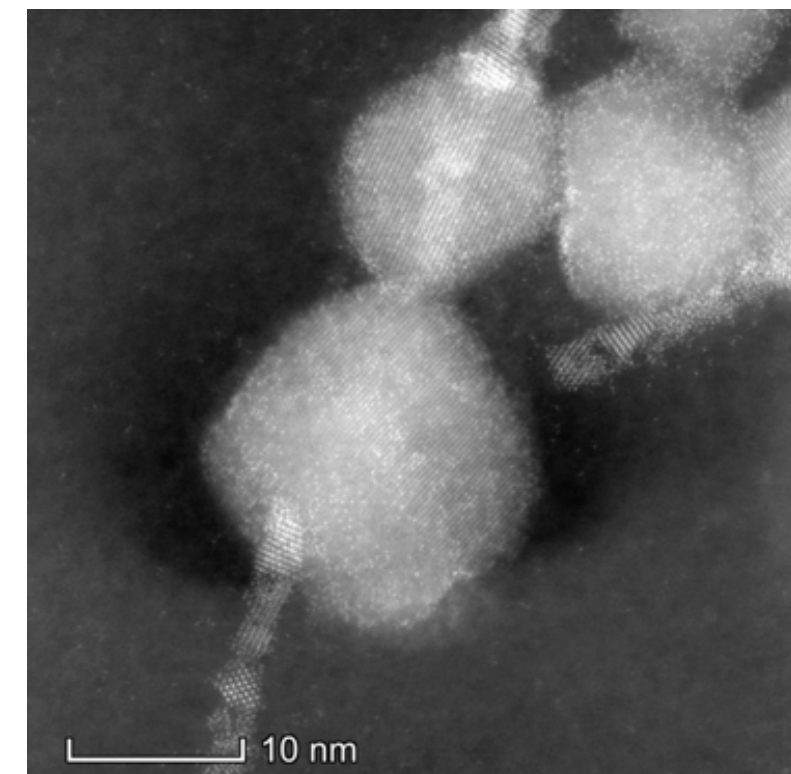
Wang, Y., Frutschi, M., Suvorova, E., Phrommavanh, V., Descostes, M., Alfatih, A.A.O., Geipel, G. and R. Bernier-Latmani. (2013) U(IV) release from a mining-impacted wetland. *Nature Communications*, v4, 2942. doi: 10.1038/ncomms3942.

Bagnoud, A., Chourey, K., Hettich, R.L., de Bruijn, I., Andersson, A.F., Leupin, O.X., Schwyn, B., and R. Bernier-Latmani (2016). Reconstructing a hydrogen-driven microbial metabolic network in Opalinus Clay rock. *Nature Communications*, v 7, p12770.

Wang, Y., Le Pape, P., Moring, G., Asta, M.P., King, G., Bartova, B., Suvorova, E., Frutschi, M., Ikogou, M., Pham, V.H.C., Vo, P.L., Herman, F., Charlet, L. and R. Bernier-Latmani. (2018) Arsenic speciation in Mekong Delta sediments depends on their depositional environment, in *Environmental Science and Technology*, v 52, 3431-3439

Marion, S., Studer, N., Desharnais, L., Menin, L., Escrig, S., Meibom, A., Hapfelmeier, S., and R. Bernier-Latmani. (2018)

In vitro and in vivo characterization of *Clostridium scindens* bile acid transformations. *Gut Microbes*, [doi: 10.1080/19490976.2018.1549420](https://doi.org/10.1080/19490976.2018.1549420).



Claudia R. Binder

Full Professor
Laboratory for Human-Environment Relations in Urban Systems (HERUS)

herus.epfl.ch
Diploma in Natural Sciences (1990, ETH Zürich)
PhD in Environmental Sciences (1997, ETH Zürich)
Privatdozentin in Human-Environment Systems (2006, ETH Zürich)

Keywords

Sustainability, Urban systems, Socio-ecological Systems, Transitions, Resilience, Energy, Food, Phosphorous, Modeling

Career trajectory

1996 - 1998	Post-doc, University of Maryland, USA
2002	Visiting Scholar, Yale University, USA
1998 - 2006	Senior research scientist, ETHZ
2006 - 2009	Ass. Prof. Social and Industrial Ecology, UniZurich
2009 - 2011	Full Prof. Systems Science, UniGraz, AT Head Institute ISIS
2011 - 2016	Full Prof. Human Environment Relations, LMU, DE
2016 to date	Full Prof. Human Environment Relations in Urban Systems, EPFL - Swiss Mobiliar Chair on Urban Ecology and Sustainable Living, EPFL
2017 to date	Academic director, Design Together, EPFL

Research mission & relevance

The research vision is to contribute tools, methods and empirical evidence for supporting and guiding the transition of urban systems towards sustainability focusing on human-environment relations. Thereby, HERUS develops innovative concepts and tools on how to integrate knowledge from both the social and the natural sciences in order to measure, analyze, interpret and optimize human-environment interactions in urban areas. The key achievements can be related to four questions shaping a sustainable transition of human-environment systems:
How do different actors perceive key environmental issues, which actions affect the environment, and what are the drivers of these actions?
How can we develop simulation models which depict the interrelated human-environment system and the options for regulation?
How can we understand and monitor transitions pathways towards sustainability?
How can we assess sustainability so that we are able include the perspectives different actors?

Honors, memberships, scientific community services

Ostrom Memorial Award for Most Innovative Paper of the Year awarded by the International Journal of the Commons (2015).
Professorship, Swiss National Science Foundation (2006).
Fellowship, Swiss National Science Foundation (1996).
Associate Editor: Journal Recycling - Journal of Industrial Ecology
Member of the research council of the Swiss National Science Foundation (SNF)
Reviewer: Research Institute for Humanity and Nature, Japan



Bibliometric indicators

[Google scholar](#) (Feb 2019)
h: 31; Citations: 3595

Most important grants since 2011

Shrinking housing's environmental footprint (SHEF). SNSF

Characterization of Quality of Space of Urban System (QualSpace) Swiss Mobiliar

Transition Dynamics in Energy Regions (TraDyn): An Integrated Model for Sustainable Policies. Austrian Climate Fond

Innovation, technology transfer & impact on society

Visions for the regional energy transition (Energierregion Weiz-Gleisdarf, AT)

Life events as tipping points towards a more sustainable and healthy nutrition (policy recommendations)

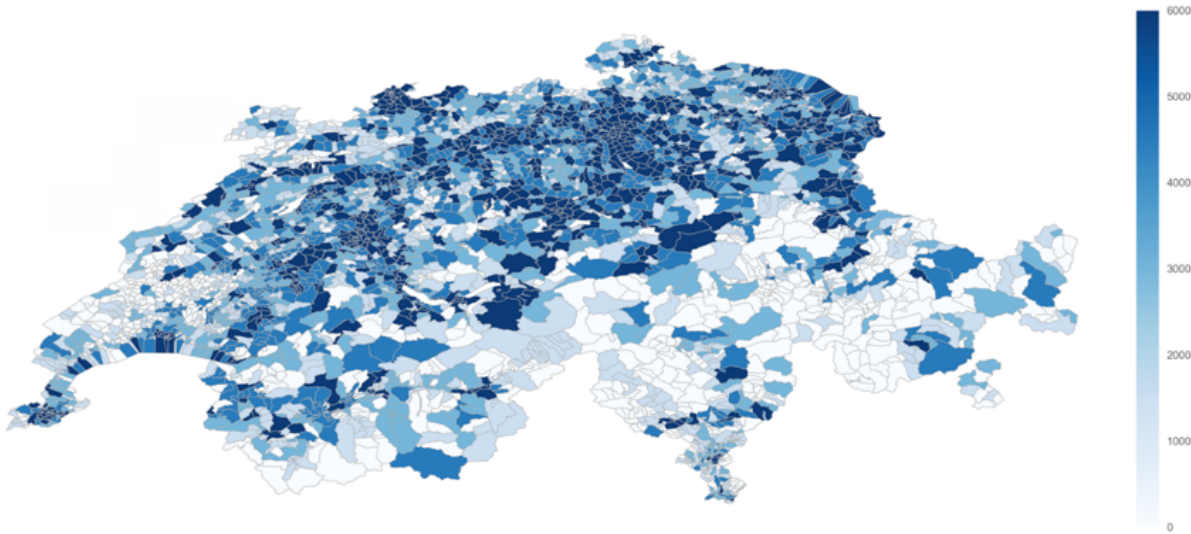
Policy recommendations for regional energy transformation

Main cooperative work / collaborative projects

SHEF: an inter-and transdisciplinary collaboration with EPFL (LEURE); ETHZ (Hellweg); Swiss Mobiliar, ABZ, SCHL ([NRP73](#))
TraDyn: an inter-and transdisciplinary collaboration with TU Delft, The Netherlands, Energieregion Weiz-Gleisdorf, Austria;
European Centre for Renewable Energy, Güssing, Austria
ALPS: an inter- and transdisciplinary project in collaboration with: ETHZ (Institute for Environmental Decisions), University of Berne (Centre for Development and Environment), and Workshop in Political Theory and Policy Analysis, Indiana University, USA (nobel prize laureate Elinor Ostrom).

Key publications since 2011

Meirelles, J., Neto, C. R., Ferreira, F. F., Ribeiro, F. L., Binder, C. R., 2018. Evolution of urban scaling: Evidence from Brazil. PLOS ONE, 13(10), e0204574. <https://doi.org/10.1371/journal.pone.0204574>
Binder, C.R., Muehlemeier, S., Wyss, R., 2017. An Indicator-Based Approach for Analyzing the Resilience of Transitions for Energy Regions. Part I: Theoretical and Conceptual Considerations, Energies, 10, 36; [doi:10.3390/en10010036](https://doi.org/10.3390/en10010036).
Jedelhauser, M., Mehr, J., Binder, C. R., 2018. Transition of the Swiss Phosphorus System towards a Circular Economy—Part 2: Socio-Technical Scenarios. Sustainability, 10(5), 1980. [doi:10.3390/su10061980](https://doi.org/10.3390/su10061980).
Binder, C.R., Knoeri, Ch., Hecher, M., 2016. Modeling transitions towards energy autonomy at regional level Raumforschung und Raumordnung. 1-12. [DOI 10.1007/s13147-016-0396-5](https://doi.org/10.1007/s13147-016-0396-5).
Binder C.R., Hinkel, J., Bots, P., Pahl-Wostl, C., 2013, Comparison of frameworks for analyzing social-ecological systems, Ecology and Society. 18 (4): 26. [online] URL: <http://www.ecologyandsociety.org/vol18/iss4/art26/>. [doi:10.5751/ES-05551-180426](https://doi.org/10.5751/ES-05551-180426).
Knoeri C., Binder C.R., Althaus H. J., 2011, An agent operationalization approach for context specific agent-based modeling. Jasss-the Journal of Artificial Societies and Social Simulation, 14 (2) 4. [doi:10.18564/jasss.1729](https://doi.org/10.18564/jasss.1729).



Alexandre Buttler

Adjunct Professor Laboratory of Ecological Systems (ECOS)

ecos.epfl.ch
MSc Biology, 1978, University of Neuchâtel, Switzerland
Teaching certificate, 1979, University of Neuchâtel, Switzerland
PhD Plant Ecology, 1987, University of Neuchâtel, Switzerland

Keywords

Terrestrial ecosystems, plant-soil-microbes’ interactions, soil organic carbon, biogeochemistry, manipulative field experiments, wetland, pasture-woodland and grassland ecosystems, ecosystem management

Career trajectory

1988	Postdoc, QMC University of London
1988	Postdoc, LRRC Agriculture Canada, Ottawa
1989-1999	Lecturer, University of Neuchâtel
1998-2003	Ordinary professor at University of Franche-Comté, France
2006-2010	Director of course “Sustainable Development”, EPFL SHS
2006-2011	Appointed member of WSL directorate
2004 to date	Adjunct Professor, joint appointment EPFL & WSL, director of the laboratory ECOS, EPFL
2013 to date	Invited professor Univ. Adam-Mieckiewicz, Poznan
2014	Visiting Professor, University of Berkeley
2014	Visiting Professor, INSTAAR, Boulder, University of Colorado

Research mission & relevance

The scientific activity of the group is centered on the organization, functioning and dynamics of terrestrial plant, animal and microbial communities in relation to soil and ecosystem processes. Main aims are the conservation, restoration and management of natural and semi-natural sensitive terrestrial ecosystems. A strong focus is on the functional links between above (vegetation) and belowground (soil) communities in the delivery of critical ecosystem services and as indicators of a changing environment. Methodologies cover descriptive/gradient and experimental approaches, as well as modeling. Research outputs concern mainly wetland, pasture woodland and grassland ecosystems.

Honors, memberships, scientific community services

2013-2017: Elected member of EPFL-SNF Research Commission
2007-now: Member of national committees CEMAGREF-IRSTEA-France
2007-2013: Appointment for European Research Council Referees in Peer Review Evaluation
Associate Editor of Wetland Ecology and Management



Bibliometric indicators

[Google Scholar](#) (Feb. 2019) h = 46, 6131 citations
151 peer-reviewed publications (93 since 2011)
73 other publications (not cited peer-reviewed, proceedings, reports)
14 chapters in books
22 articles for a broader audience
23 press releases (e.g. Le Monde, The Guardian Weekly)

Most important grants since 2011

Interactive effects of altitude and management on resistance and resilience of permanent grasslands to drought (SNSF, 476 KCHF)

Influence of global warming and drought on carbon sequestration and biodiversity of Sphagnum peatlands (Poland-Swiss Research Program, 1 M CHF)
Experimental assessment of innovative slash and burn cultivation practices for sustainable land-use and deforestation prevention in Central Menabe. Madagascar (SNSF r4d, 357 KCHF)

Innovation, technology transfer & impact on society

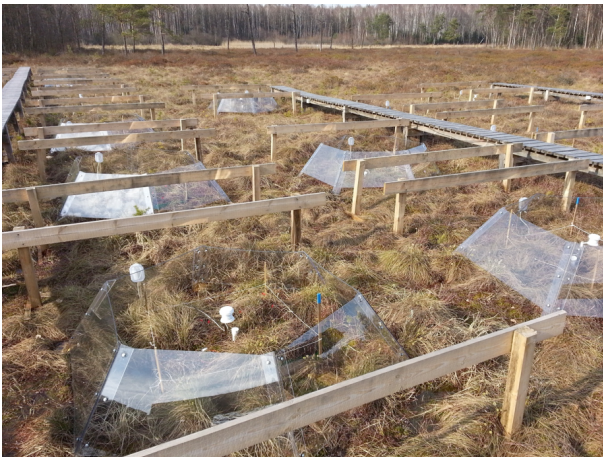
Sustainable soil management in slash-and-burn cultivation in Madagascar
Soil organic matter management in oil palm plantation

Main cooperative work / collaborative projects

Experiments on climate change in wetlands (Univ. Adam-Mieckiewicz, Poznan, WSL, University of Neuchâtel, CNRS, University of Orléans, University of Poitiers, University of Franche-Comté, University of Nancy I, Yugra State University, Russia)
Drought experiments in grasslands (Agroscope, WSL, University of Göttingen, University of Bordeaux)
Oil Palm Adaptive Landscape and carbon cycle (ETHZ, EPFL, WSL, Luc Hoffman Institute, CIFOR, WWF, CIRAD, IRD, Univ. Javeriana, Bogor Agricultural University, Naturaleza, Energia y Sociedad NES)

Key publications since 2011

Buttler, A., Mariotte, P., Meisser, M., Guillaume, T., Signarbieux, C., Vitra, A., Preux, S., Mercier, G., Quezada, J., Bragazza, L., Gavazov, K., (2019). Drought-induced decline of productivity in the dominant grassland species *Lolium perenne* L. depends on soil type and prevailing climatic conditions. *Soil Biology and Biochemistry* 132 (2019) 47–57. <https://doi.org/10.1016/j.soilbio.2019.01.026>
Gavazov, K., Albrecht, R., Buttler, A., Dorrepaal, E., Garnett, M.H., Gogo, S., Hagedorn, F., Mills, R.T.E., Robroek, B.J.M. and Bragazza, L. (2018) Vascular plant-mediated controls on atmospheric carbon assimilation and peat carbon decomposition under climate change. *Global Change Biol.* 2018; 24:3911–3921. ([doi:10.1111/gcb.14140](https://doi.org/10.1111/gcb.14140)).
Sanginés de Cárcer, P., Vitasse, Y., Peñuelas, J., Jassey, V.E.J., Buttler, A., Signarbieux, C. 2018. Vapor-pressure deficit and extreme climatic variables limit tree growth. *Glob Change Biol.* 24: 1108-1122. <https://doi.org/10.1111/gcb.13973>
Robroek, Bjorn J. M., Vincent E. J. Jassey, Richard J. Payne, Magalí Martí, Luca Bragazza, Albert Bleeker, Alexandre Buttler, Simon J. M. Caporn, Nancy B. Dise, Jens Kattge, Katarzyna Zajac, Bo H. Svensson, Jasper van Ruijven, Jos T. A. Verhoeven. 2017. Taxonomic and functional turnover are decoupled in European peat bogs. *Nature Communications* 8: 1161. <https://www.nature.com/articles/s41467-017-01350-5>
Bragazza, L., Parisod, J., Buttler, A., Bardgett, R.D. 2013. Biogeochemical plant-soil microbe feedback in response to climate warming. *Nature Climate Change* 3 : 273-277. <https://www.nature.com/articles/nclimate1781?proof=true>



Johan Gaume



SNSF Eccellenza Professor Snow and Avalanche Simulation Laboratory (SLAB)

slab.epfl.ch
Mechanical Engineer, (2008, INPG, Grenoble, France)
MSc Mechanics of complex fluids (2008, INPG, Grenoble, France)
PhD Environmental Sciences (2012, Grenoble University, France)

Keywords

Snow, snow mechanics, snow avalanches, fracture, computational mechanics, multiscale modeling, cryosphere, natural hazards, rheology

Career trajectory

2019 to date	SNSF Eccellenza Professor, SLAB, EPFL
2015 to date	Guest scientist, SLF, Davos
2018	Visiting Scholar, Computer Science Department, UPenn, USA
2017	Visiting Scholar, Department of Mathematics, UCLA, USA
2015-2018	Research and Teaching Associate, CRYOS, EPFL
2013-2015	Research Associate, SLF, Davos
2009-2012	Research Assistant, IRSTEA, Grenoble, France

Research mission & relevance

SLAB is a group of 4 people including 2 PhD students and 1 PostDoc. Multiscale numerical methods are developed to simulate snow and avalanches and better understand the complex mechanical processes at play. We focus on the Material Point Method (MPM) which is an ideal candidate for modelling large deformations, fractures, collisions and coexistence between solid- and fluid behaviors, typical of snow avalanches. Our work has the potential to break a critical science barrier in avalanche science, namely modeling the whole avalanche process, from microstructural failure to dynamic crack propagation and flow at the slope scale and in a unified manner. Model results are validated by comparison to field and laboratory experiments performed at the SLF in Davos. The outcomes of our research have the potential to lead to an unparalleled insight into the mechanics of avalanches and ultimately improve avalanche forecasting and risk management.

Honors, memberships, scientific community services

2019	Moderator. International Mountain Conference, Innsbruck.
2019	Guest Editor. Frontiers in Earth Sciences.
2019	Lead convener. Session “Challenges in measuring and modeling snow mechanics” IUGG 2019, Montreal, Canada.
2019	International workshop co-coordinator. “Computational methods for snow and avalanche release mechanics” ALERT 2019 Geomaterials conference, Aussois, France.

Bibliometric indicators

Google scholar (Jan. 2019):
H-index = 13, i10-index = 17
466 citations
Researchgate
RG-score = 28, Reads = 7’747

Most important grants since 2011

“Unified modeling of snow and avalanche mechanics using the Material Point Method” SNSF Eccellenza Professorial fellowship (grant number PCEFP2_181227). 2019-2024
“Multiscale analysis and modeling of slab avalanche release processes” SNSF Ambizione fellowship (grant number PZ00P2_161329). 2015-2018

“A material point method for snow avalanche modeling” SNSF grant (grant number IZK0ZZ_174275). 2017

Innovation, technology transfer & impact on society

Transfer to practice: Avalanche education event: Safety Days in Arêche-Beaufort

3D MPM numerical code for geomaterials (including snow and avalanches)

Crack propagation index model in the snow cover model SNOWPACK for avalanche forecasting

Honors, memberships, scientific community services (continued)

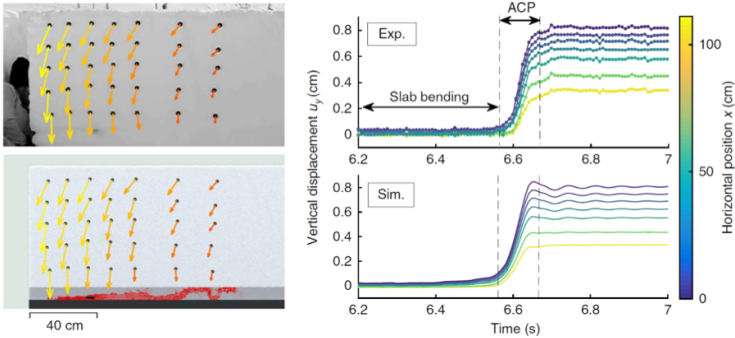
2019	Guest editor. Cold Reg. Sci. Technol.
2018	Scientific conference reviewer. International Snow Science Workshop ISSW 2018, Innsbruck, Austria
2017	International workshop principal organizer. “Slab Avalanche Multiscale Mechanical Modeling 2017 (SLAM3)”.
2015 to date	Convener. Session “Snow and snow cover processes”. European Geoscience Union, Vienna, Austria.
2014	Excellence Scholarship of Swiss Government - SEFRI
2013	Finalist of the Henri Milon - Hydrology - PhD prize

Main cooperative work / collaborative projects

A material point method for snow avalanche modeling (Prof. Joseph Teran, UCLA)
Multi-species simulation of ice and water mixtures using MPM: application to the dynamics of calving glaciers (Prof. Chenfanfu Jiang, UPenn)
Dynamic crack propagation in snow: from crack formation to predicting slab avalanche size (Dr. Alec van Herwijnen, SLF, Davos)

Key publications since 2011

Gaume J, Gast T, Teran J, van Herwijnen A, Jiang C. 2017. Dynamic anticrack propagation in snow, Nature Communications. 9(1), 3047.
Gaume J, van Herwijnen A, Chambon G, Wever N, Schweizer J. 2017. Snow fracture in relation to slab avalanche release: critical state for the onset of crack propagation, The Cryosphere, 11, 217-228
Gaume J, van Herwijnen A, Chambon G, Birkeland K., Schweizer J. 2015. Modeling of crack propagation in weak snowpack layers using the discrete element method., The Cryosphere, 9, 1915-1932
Reiweger I, Gaume J, Schweizer J. 2015. A new mixed mode failure criterion for weak snowpack layers., Geophysical Research Letters, 42, 1427-1432
Gaume J, Chambon G, Eckert N, Naaim M. 2012. Relative influence of mechanical and meteorological factors on slab avalanche release depth distributions, Geophysical Research Letters, 39(12), L12401.



François Golay

Laboratory of Geographic Information Systems (LASIG) Full Professor

Diploma in Rural Engineering and Surveying
(1982, EPFL, Switzerland)
PhD in Technical Sciences (1992, EPFL, Switzerland)
lasig.epfl.ch

Research and Teaching Associate Stéphane Joost

MA Arts (1995, University of Lausanne, Switzerland)
PhD Molecular spatial ecology (2006, EPFL, Switzerland)

Keywords

Geographic Information Systems (GIS), Spatial Decision Support, Spatial analysis, Spatial statistics, Spatial epidemiology, Landscape genomics, Molecular ecology, Bioinformatics

Career trajectory

François Golay:	
1982 – 1989	Research and Teaching Assistant for Land Information Systems (EPFL. Institute for Geodesy and Surveying)
1991 – 1993	Leader of the business analysis domain at the GIS consulting company “SIT-Conseil SA” (Carouge, Switzerland)
1993 to date	Professor in GIS, Director of the GIS Lab (LaSIG). Full professor since 1999.
Stéphane Joost	
2009 to date	Research and Teaching Associate, LASIG, EPFL
2008-2009	Scientist, LASIG, EPFL
2007-2008	Founder, MicroGIS SA, Saint-Sulpice, Switzerland
2007-2008	Lecturer, University of Lausanne (UNIL), Switzerland
2006-2007	Postdoc, University of Piacenza (UCSC), Italy

Research mission & relevance

Research at LASIG covers a large range of issues, all relevant to spatial data infrastructures, spatial analysis, and spatial decision support. Recent developments have tackled multi-scale digital elevation models, data-scarce modeling methods for air-pollution modeling, and remote-sensing methods (LIDAR and optical imagery) for forestry management. A special focus has been dedicated to the emerging field of landscape genomics, dealing with advanced algorithms to investigate correlations between environmental variables and genes under selection. These novel correlative approaches are also relevant to elicit space-related public health issues.

Honors, memberships, scientific community services

François Golay:
Director of the Section of Environmental Sciences and Engineering (SIE) at EPFL (2013 - present)



Bibliometric indicators

Stéphane Joost :
[Google Scholar](https://scholar.google.com/citations?user=8YUWwQAAAAAJ) (March 2019)
h = 30, 3612 citations
74 peer-reviewed publications

Most important grants since 2011

[Innovative Management of Animal Genetic Resources](#), (EU H2020)
[Very high-resolution digital elevation models for multi-scale analysis in landscape genomics](#) (SNSF)

[Advances in farm animal genomic resources](#) (ESF)

Innovation, technology transfer & impact on society

Open source software:
[SamBada](#), High performance computation of landscape genomic models
[Digital-Forestry-Toolbox](#): A collection of digital forestry tools for Matlab
Open source database:
[SAVMAP](#), Near real-time ultrahigh-resolution imaging for conservation in semi-arid savanna

Honors, memberships, scientific community services (continued)

Swiss Delegate to the EuroSDR European organization for Spatial Data Research (2006 - present)
Member of the Swiss strategic committee for geoinformation (GKG)

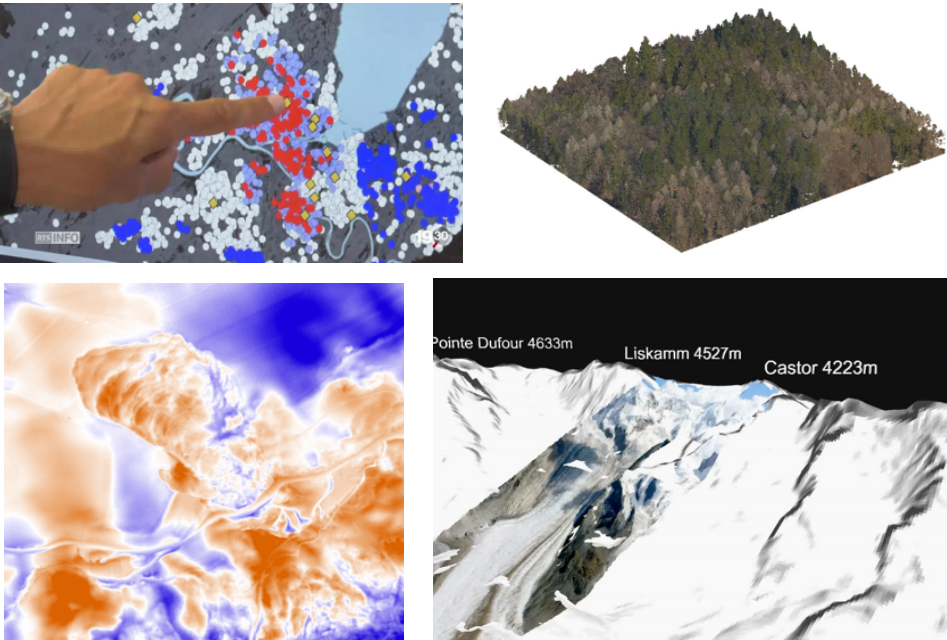
Stéphane Joost:
First winner of the Garrison Award for Best Dissertation in Computational Geography, Marble Fund for Geographic Science, Association of American Geographers (AAG), USA
Associate editor, Frontiers in Evolutionary and Population Genetics
Associate editor, Frontiers in Conservation
Secretary General of the GITTA Association (<http://www.gitta.info>)

Main cooperative work / collaborative projects

[Effective methodology for the assessment of integrated energy strategies](#), R4D, SNSF
[Adaptmap](#), an international coordination effort for genotyping and resequencing goat breed georeferenced molecular information
MOOC4Dev: [two collaborative MOOCS on GIS](#) developed with geoscientists in Ivory Coast (Fernand Kouamé) and Senegal (Amadou Sall)

Key publications since 2011

Joost, S., Haba-Rubio, J., Himsl, R., Vollenweider, P., Preisig, M., Waeber, G., Marques-Vidal, P., Heinzer, R., Guessous, I., 2018. Spatial clusters of daytime sleepiness and association with nighttime noise levels in a Swiss general population (GeoHypnoLaus). International Journal of Hygiene and Environmental Health 221, 951–957.
Stucki, S., OrozcoterWengel, P., Forester, B.R., Duruz, S., Colli, L., Masembe, C., Negrini, R., Landguth, E., Jones, M.R., Bruford, M.W., Taberlet, P., Joost, S., 2017. High performance computation of landscape genomic models including local indicators of spatial association. Molecular Ecology Resources 17, 1072–1089.
Joost, S., Duruz, S., Marques-Vidal, P., Bochud, M., Stringhini, S., Paccaud, F., Gaspoz, J.-M., Theler, J.-M., Chételat, J., Waeber, G., Vollenweider, P., Guessous, I., 2016. Persistent spatial clusters of high body mass index in a Swiss urban population as revealed by the 5-year GeoCoLaus longitudinal study. BMJ Open 6, e010145.
Parkan, M., Tuia, D., Feb. 2018. Estimating Uncertainty of Point-Cloud Based Single-Tree Segmentation with Ensemble Based Filtering. Remote Sensing 10 (2), 335.
Madrazo, J., Clappier, A., 2018. Low-cost methodology to estimate vehicle emission factors. Atmos. Pollut. Res. 9, 322–332.



Urs von Gunten

Full Professor

Laboratory for Water Quality and Treatment (LTQE)

ltqe.epfl.ch

Diploma Chemistry (1983, ETH Zürich, Switzerland)

PhD Inorganic Chemistry (1989, ETH, Zürich, Switzerland)



Keywords

Oxidation/analytical chemistry, reaction mechanisms, reaction kinetics, micropollutant transformation, oxidation by-products, disinfection, water treatment, natural organic matter characterization

Career trajectory

1989-1991	Postdoc, Eawag, Swiss Federal Institute of Aquatic Science, Dübendorf, Switzerland
1992 to date	Research Scientist at Eawag
1998-1999	Head of Chemistry Department, Eawag
2000/2001	Visiting Scientist at University of Colorado, Boulder
2000-2004	Head of Department "Water Resources and Drinking Water, Eawag
2004-2008	Head of project "Drinking Water for the 21st century"
2008/2009	Visiting professor Curtin University, Perth, Australia
2011 to date	Full professor, EPFL
2013-2016	Head of project "Regional Water Supply Basel Country 21"
2017/2018	Visiting professor University of California, Berkeley

Research mission & relevance

The group's mission is to better understand processes, which are relevant to drinking water and wastewater quality and treatment. After 2011, the main research topics were: (i) development of novel oxidative treatment systems, (ii) investigation of feasibility of ozonation for enhanced wastewater treatment, (iii) development of a tool for prediction of ozonation transformation products and (iv) development of strategies for drinking water management in the Canton Basel Country. In these tasks fundamental studies on reaction mechanisms and kinetics were combined with real world applications in the water sector in collaborations with practitioners.

Honors, memberships, scientific community services

2001/2007/2015	Recipient of the Harvey Rosen Award of the International Ozone Association
2007	Honorary Professorship at the Harbin Institute of Technology, Harbin, China
2010/2011	Associate Editor "Environmental Science and Technology"
2014/2015/2018	Thompson Reuters/Clarivate Analytics Highly Cited Researcher
2015	Professorship under the Chinese Academy of Sciences President's International Fellowship Initiative for Distinguished Scientists

Member of the main commission water of the Swiss Gas and Water Federation (SVGW).

Bibliometric indicators

[Google scholar](https://scholar.google.com/citations?user=8428600) (Jan. 2019) h = 84, 28600 citations

227 peer-reviewed publications (102 since 2011)

1 book

Most important grants since 2011

A mechanistic approach for identifying sources of mutagenicity formed during wastewater ozonation (SNSF)

Regional Water Supply Basel County 21 (Canton of Basel Country)

Reactions of ozone with water matrix components: reactive sites and oxidation by-product formation (SNSF)

Innovation, technology transfer & impact on society

Novel Membrane-Ozone System for micropollutant abatement and bromate minimization (MEMBRO3X)

Novel analytical method for total N-nitrosamine determination by UV-photolysis and chemiluminescence detection

Process control system for ozonation reactors by a real-time approach

Main cooperative work / collaborative projects

EU-project DEMEAU, Demonstration of promising technologies to address emerging pollutants in water and wastewater (Eawag, EPFL, KWR)

Regional Water Supply Basel Country 21 (Eawag, EPFL, University of Basel, University of Bern, Canton Basel Country)

Advanced Oxidation and Transformation of organic micropollutants (EPFL, Eawag, University of Colorado; Boulder)

Key publications since 2011

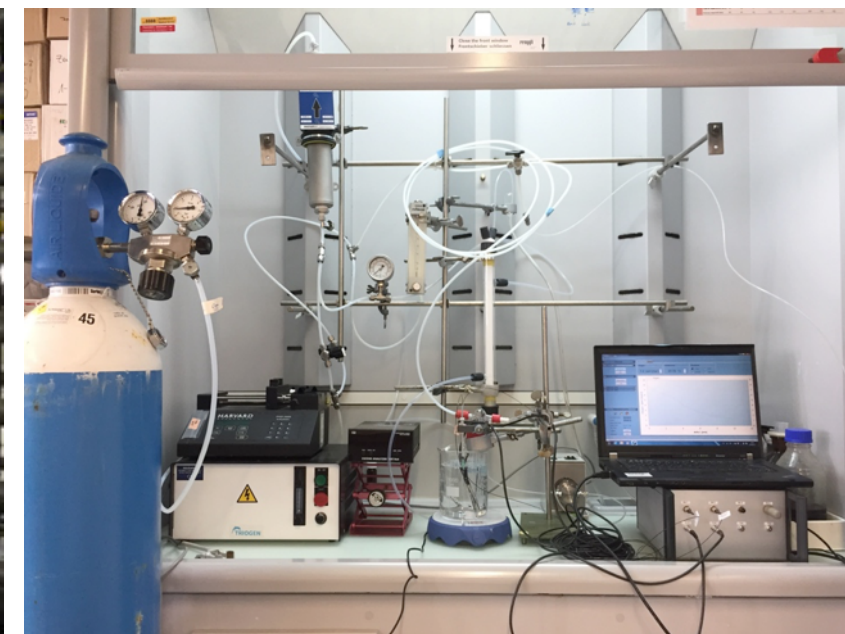
von Gunten U. (2018) Oxidation processes in water treatment – are we on track? Environ. Sci. Technol. Perspective, 52: 5062-5075. DOI: 10.1021/acs.est.8b00586

Tentscher P. R., Bourgin M., von Gunten U. (2018) Ozonation of para-substituted phenolic compounds yields p-benzoquinones, other cyclic alpha,beta-unsaturated ketones, and substituted catechols, Environ. Sci. Technol., 52: 4763-4773. ACS Editor's choice. DOI: 10.1021/acs.est.8b00011

Bourgin M., Borowska E., Helbing J., Hollender J., Kaiser H.-P., Kienle C., McArdell C. S., Schifferli A., Simon E., von Gunten U. (2017) Effect of operational and water quality parameters on conventional ozonation and the advanced oxidation process O₃/H₂O₂: Kinetics of micropollutant abatement, transformation product and bromate formation, Water Res., 122: 234-245. DOI: 10.1016/j.watres.2017.05.018

Lee M., Blum L. C., Schmid E., Fenner K., von Gunten U. (2017) A computer-based prediction platform for the reaction of ozone with organic compounds in aqueous solution: Kinetics and mechanisms, Environmental Science: Processes & Impacts, 19: 465-476. DOI: 10.1039/c6em00584e

Lee Y., von Gunten U. (2016) Advances in predicting organic contaminant abatement during ozonation of municipal wastewater effluents: Reaction kinetics, transformation products and changes of biological effects, Environmental Science: Water Science and Technology, 2: 421-442. Editors' choice collection 2016. DOI: 10.1039/c6ew00025h



Janet G. Hering

Full Professor Group in Environmental Chemistry (UPHCE)

www.eawag.ch

AB Chemistry (1979, Cornell University, Ithaca, NY, USA)

AM Chemistry (1981, Harvard University, Cambridge, MA, USA)

PhD Oceanography (1988, Massachusetts Institute of Technology/ Woods Hole Oceanographic Institution Joint Program, Cambridge, MA, USA)

Keywords

biogeochemistry, mineral surface chemistry, mineral weathering, science-policy interface, water treatment processes

Career trajectory

1988-1991	Postdoc, Eawag, Dübendorf, Switzerland
1991-1995	Asst., later Assoc. Prof., UC Los Angeles
1996-2006	Assoc., later Full Prof., California Institute of Technology
2007 to date	Director, Eawag
2007 to date	Full Professor, ETH Zurich
2010 to date	Full Professor, EPFL

Research mission & relevance

Professor Hering's research interests include:

Knowledge exchange at the interface of science with policy and practice

Biogeochemical cycling of trace metals and metalloids: microbial redox cycling; field studies of metal redox cycling, mobilization, and sequestration

Water treatment processes for removal of inorganic contaminants: role of sorption in contaminant removal; design of novel sorbents

Mineral weathering and reactions at mineral surfaces: mechanisms and kinetics of dissolution and precipitation reactions; macroscopic, spectroscopic, and modeling studies of sorption processes

Because of Prof. Hering's administrative responsibilities as the Director of Eawag, she does not manage an independent research group but rather conducts her research in collaboration with other Eawag researchers.

Honors, memberships, scientific community services

Member, SNSF Foundation Council

Member, Board of Reviewing Editors, Science

Member, U.S. National Academy of Engineering

Laureate, Clarke Water Prize

Fellow, Geochemical Society/European Association of Geochemistry

Member or past member of scientific advisory boards: (since 2017) Ernst Strüngmann Forum, Helmholtz UFZ (2015-2017), Leibniz IGB (2009-2016)



Bibliometric indicators

[Web of Science](#) (February 2019)

h = 32, 5564 citations

152 peer-reviewed publications
(34 since 2011)

1 book

Most important grants since 2011

Begleitforschung: Methoden der inter- und transdisziplinären

Wissensintegration und der Anwendung im NFP61 Syntheseprozess (SNSF)

Riverbank filtration under climate change scenarios (RIBACLIM) (SNSF)

Innovation, technology transfer & impact on society

ETH Women Professors Forum, Chair (since 2016), Vice Chair (2012-2016)

Hering, J.G. "Getting Water Research into Policy and Practice (GRIPP for Water)", Clarke Prize lecture. National Water Research Institute (NWRI): Irvine, CA, <http://www.nwri-usa.org/clarke-prize-laureates>

Main cooperative work / collaborative projects

Synergistic effects of redox processes and ligand controlled dissolution of iron(hydr)oxide phases (Eawag, ETH Zurich, EPFL, Univ. of Vienna)

Riverbank filtration under climate change scenarios (EPFL, ETH Zurich, Eawag, Univ. of Neuchatel)

Key publications since 2011

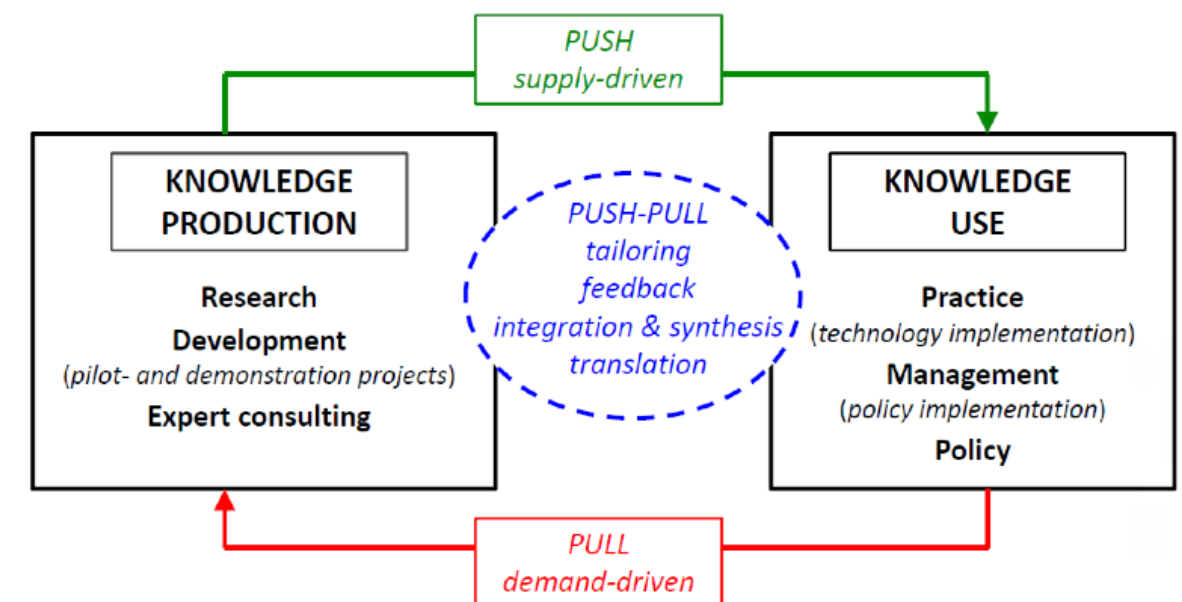
Biswakarma, J., Kang, K., Borowski, S., Schenkeveld, W., Kraemer, S., Hering, J.G., Hug, S., (2019) "Fe(II)-catalyzed ligand-controlled dissolution of iron(hydr)oxides", Environ. Sci. Technol. DOI: 10.1021/acs.est.8b03910.

Hering, J.G. (2019) "Women as Leaders in Academic Institutions: Personal Experience and Narrative Literature Review", Pure App. Chem. <https://doi.org/10.1515/pac-2018-0603>.

Hering, J.G. (2018) "Implementation Science for the Environment", Environ. Sci. Technol. 52: 5555–5560, <http://dx.doi.org/10.1021/acs.est.8b00874>.

Hering, J.G., Nunnemacher, L. and von Waldow, H., Perspectives from a Water Research Institute on Knowledge Management for Sustainable Water Management" (2018) in Handbook of Knowledge Management for Sustainable Water Systems, (Series Challenges in Water Management), M. Russ (Ed.) Wiley, New York, pp. 13-33, <http://dx.doi.org/10.1002/9781119271659.ch1>.

Hering, J.G., Katsoyiannis, I.A., Ahumada Theoduloz, G., Berg, M. and Hug, S.J. (2017) "Arsenic removal from drinking water: Experiences with technologies and constraints in practice", J. Environ. Eng ASCE, DOI: 10.1061/(ASCE)EE.1943-7870.000122.



Christof Holliger



Full Professor
Laboratory for Environmental biotechnology (LBE)

lbe.epfl.ch
MSc Biology (1984, ETHZ Zürich, Switzerland)
PhD Environmental Microbiology (1992, University of Wageningen, The Netherlands)

Keywords
Environmental microbiology, microbial ecology, microbial physiology, biochemistry, molecular ecology, bioremediation, biological wastewater treatment

Career trajectory	
1992-1998	Groupleader Eawag Kastanienbaum; Switzerland
1998-2004	Assistant Professor, EPFL
2004-2013	Associate Professor, EPFL
2013 to date	Full professor, EPFL
2005-2013	Director, Env. Sci. Eng. Section, EPFL
2008 to date	Directorate member Swiss Center for Ecotoxicology

Research mission & relevance
Environmental biotechnology is the multidisciplinary integration of sciences and engineering in order to utilize the huge biochemical potential of microorganisms for the restoration and preservation of the environment and for the sustainable use of resources. We have three main research areas: (i) microbial ecology of aerobic granular sludge involved in biological wastewater treatment, (ii) physiology, biochemistry and molecular biology of organohalide-respiring bacteria, and (iii) standardization of biomethane potential (BMP) tests. All the research activities have a fundamental part increasing the understanding of the microbiology involved as well as an applied part that is shared with people from the private sector.

Honors, memberships, scientific community services
Fellow, Swiss Society of Microbiology (SSM)
Treasurer of SSM since 2017
Fellow, American Society of Microbiology
Fellow, International Water Association IWA

Bibliometric indicators
[Google Scholar](#) (Feb. 2019) h=46, 7165 citations
110 peer-reviewed publications

Most important grants since 2011
Aerobic granular sludge wastewater treatment: From microbial ecology to application (SNSF)

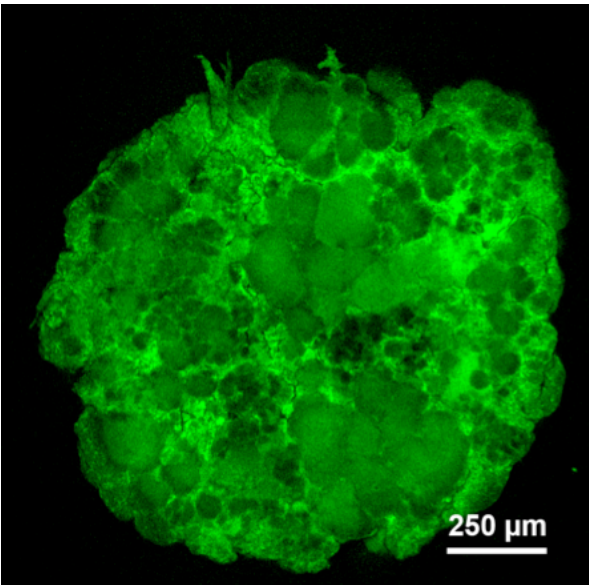
Regulation and functional characterization of reductive dehalogenase gene clusters (SNSF)

Aerobic granular sludge wastewater treatment: Who is doing what in this particular ecosystem? (SNSF)

Innovation, technology transfer & impact on society
Open source manual:
[A technical assistance manual for assessment of natural attenuation of chloroethenes-contaminated sites](#)

Main cooperative work / collaborative projects
Aerobic granular sludge wastewater treatment: From microbial ecology to application (Eawag, Dübendorf, Switzerland)
International inter-laboratory study on biomethane potential tests (38 partners)

Key publications since 2011
Weissbrodt, D. G., S. Lochmatter, S. Gabus, E. Rohrbach-Brandt, P. Rossi, S. Ebrahimi, and C. Holliger. 2012. Bacterial selection during the formation of early-stage aerobic granules in wastewater treatment systems operated under wash-out dynamics. *Front. Microbiol.* 3:332. [DOI 10.3389/fmicb.2012.00332](#)
Lochmatter, S. and C. Holliger. 2014. Optimization of operation conditions for the startup of aerobic granular sludge reactors biologically removing carbon, nitrogen, and phosphorous. *Water Research* 59:58-70. [DOI 10.1016/j.watres.2014.04.011](#)
Tarnawski, S-E., P. Rossi, M. V. Brennerova, M. Stavelova, and C. Holliger. 2016. Validation of an Integrative Methodology to Assess and Monitor Reductive Dechlorination of Chlorinated Ethenes in Contaminated Aquifers. *Front. Environ. Sci.* 4:7. [DOI 10.3389/fenvs.2016.00007](#)
Holliger, C., M. Alves, D. Andrade, I. Angelidaki, S. Astals, U. Baier, C. Bougrier, P. Buffière, M. Carballa, V. de Wilde, F. Ebertseder, B. Fernández, E. Ficara, I. Fotidis, J.-C. Frigon, H. Fruteau de Laclos, D. S. M. Ghasimi, G. Hack, M. Hartel, J. Heerenklage, I. Sarvari Horvath, P. Jenicek, K. Koch, J. Krautwald, J. Lizasoain, J. Liu, L. Mosberger, M. Nistor, H. Oechsner, J. V. Oliveira, M. Paterson, A. Pauss, S. Pommier, I. Porqueddu, F. Raposo, T. Ribeiro, F. Rüsch Pfund, S. Strömberg, M. Torrijos, M. van Eekert, J. van Lier, H. Wedwitschka, and I. Wierinck. 2016. Towards a standardization of biomethane potential tests. *Water Sci. Technol.* 74:2515-2522. [DOI 0.2166/wst.2016.336](#)
Leventhal, G. E., C. Boix, U. Kuechler, T. N. Enke, E. Sliwerska, C. Holliger, and O. X. Cordero. 2018. Strain-level diversity drives alternative community types in millimeter-scale granular biofilms. *Nature Microbiology* 3:1295-1303. [DOI 10.1038/s41564-018-0242-3](#)



Tamar Kohn

Associate Professor Environmental Chemistry Laboratory (LCE)

lce.epfl.ch

Diploma Environmental Sciences (1999, ETH Zürich)

PhD Environmental Engineering (2004, Johns Hopkins University, USA)

Keywords

Environmental virology, disinfection, micropollutants, water and wastewater treatment, contaminant fate, sanitation technologies

Career trajectory

2004 – 2006	Postdoc, University of California, Berkeley, USA
2007 – 2014	Tenure-track assistant Professor, Environmental Engineering Institute, EPFL
2010 to date	Adjunct Researcher, Eawag
2014 to date	Associate Professor Environmental Engineering Institute, EPFL
2017 to date	Director Doctoral Program in Civil and Environmental Engineering

Research mission & relevance

The mission of my group is to understand the fundamental principles and processes that lead to improved water quality in natural and engineered systems. We mainly focus on two of the most pertinent water quality issues, namely viral pathogens and organic micropollutants. Our long-term goal is to use the knowledge gained from our research to improve existing water treatment and sanitation systems, and develop novel, more effective methods. The lab's main strength is the molecular-level analysis of processes involved in virus disinfection and resistance. For our work, we use a combination of (photo-) chemical, molecular biological and modeling tools.

Honors, memberships, scientific community services

External advisor, research project MetaPatFood, funded by the Spanish Ministry of Economy, Industry and Competitiveness (2018-2022)
Paper of the year award, Environmental Science and Technology, second runner-up among 1600 submissions (2016)
Advisory board, World Health Organisation International Scheme to Evaluate Household Water Treatment Technologies (2014-present)
Associate editor, Environmental Sciences: Water Research and Technology (2014-2018)
Featured in the Journal of Environmental Monitoring Emerging Investigators issue (2010)



Bibliometric indicators

Google Scholar (January 2019)

h = 30, 3068 citations

65 peer-reviewed publications (48 since 2011)

Most important grants since 2011

Extra-host dynamics of Enterovirus and associated risks of waterborne disease, SNSF

Super-fine powdered activated carbon coupled to ultrafiltration for efficient removal of micropollutants from water and wastewater, Federal Office of the Environment (BAFU/OFEV)

Association between environmental persistence and disinfection resistance in waterborne enteroviruses, SNSF

Innovation, technology transfer & impact on society

Risk framework for sanitation service workers in eThekwin, South Africa

New technology for energy- and cost-efficient micropollutant removal

Method for monitoring pathogen removal during potable water reuse.

Main cooperative work / collaborative projects

Hygiene and risks of treatment-valorization processes of source-separated waste (Eawag, Swedish Agricultural University)

Non-Culture-Based Methods for Pathogen Monitoring in Potable Reuse (University of Michigan, Trussel Technologies, CA)

Virus transfer from liquid to skin and associated risks (Eawag)

Key publications since 2011

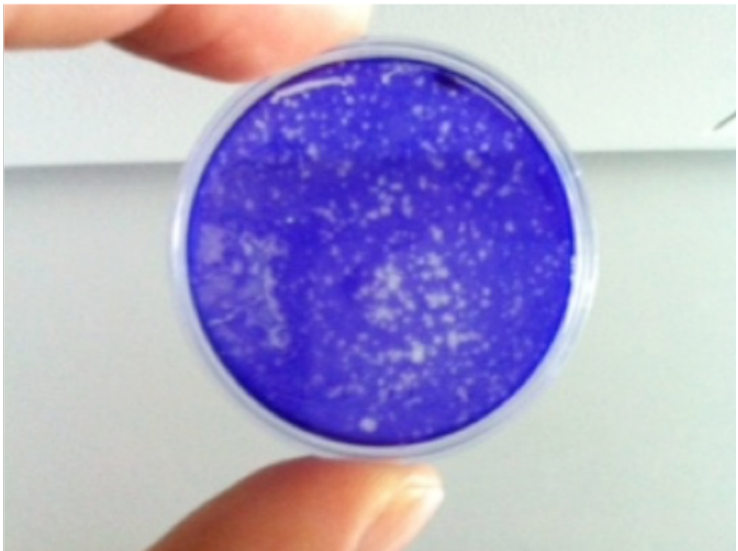
Carratalà, A., Shim, H., Zhong, Q., Bachmann, V., Jensen, J.D., Kohn, T. Experimental adaptation of human echovirus 11 to ultraviolet radiation leads tolerance to disinfection and resistance to ribavirin. *Virus Evolution*, 2017, 3, vex035.

Zhong, Q., Carratalà Ripolles, A., Nazarov, S., Guerrero-Ferreira, R.C., Piccinini, L., Leiman, P.G., Kohn, T. Genetic, structural and phenotypic properties of MS2 coliphage with resistance to ClO2 disinfection. *Environmental Science and Technology*, 2016, 50, 13520 – 13528

Bonvin, F., Jost, L., Randin, L., Bonvin, E., Kohn, T. Super-fine powdered activated carbon (SPAC) for efficient removal of micropollutants from wastewater treatment plant effluent. *Water Research*, 2016, 90, 90-99.

Bischel, H.N., Özel Duygan, B.D., Strande, L., McArdell C., Udert, K.M., Kohn, T. Pathogens and pharmaceuticals in source-separated urine in eThekwin, South Africa, *Water Research*, 2015, 85, 57-65.

Wigginton, K.R., Pecson, B.M., Sigstam, T., Bosshard, F., Kohn, T. Virus inactivation mechanisms: impact of disinfectants on virus function and structural integrity. *Environmental Science and Technology*, 2012, 46, 2069-12078.



Michael Lehning



Full Professor Laboratory of Cryospheric Sciences (CRYOS)

cryos.epfl.ch

Joint Professorship Snow Processes and Cryospheric Sciences, WSL
Institute for Snow and Avalanche Research, SLF and EPFL
MSc Atmospheric Sciences, University of California (1992)
Diplom Geoökologie (Major Meteorology / Hydrology) Univ. Bayreuth (1993)
Post Graduate in Statistics (ETHZ, 1996)
PhD Atmospheric Physics (ETHZ, 1997)

Keywords

Snow Processes, Snow Modelling, Atmosphere, Boundary Layer,
Turbulence, Renewable Energy, PV, Wind, Snow Transport, Snow
Deposition, Precipitation, Extreme Environments

Career trajectory

1997 - 2005	Developer and Scientist, SLF Davos
2000 - 2005	Group Leader "Process Models", SLF Davos
2002 - 2005	Reader (Gastdozent) Universität Innsbruck
2006 - 2018	Head Research Unit "Snow and Permafrost", WSL SLF
2007 - 2011	Reader (Lehrauftrag) ETHZ
2011 to date	Full (Joint)Professor, EPFL and WSL

Research mission & relevance

The group's mission is on a better understanding of snow and snow-atmosphere interactions. A particular focus are measurements and simulation of snow deposition and snow transport in order to constrain precipitation estimates in extreme environments and to understand the build-up of ice masses in ice sheets and glaciers. The role of snow is also investigated with respect to avalanche formation and we develop numerical models for snow, atmospheric flows and hydrology. Our know-how on snow and atmospheric boundary layer processes in high mountains and polar regions enables us to contribute to diverse fields from snow management in ski areas to renewable energy potential assessment in extreme environments.

Honors, memberships, scientific community services

Chair LOC: Joint SCAR / IASC Conference Polar2018 in Davos, 2600 participants, www.polar2018.org
Editor (AE): Frontiers in Earth Sciences: Cryospheric Sciences
Editor (AE): AGU Journal WRR
National Scientific Promotion Committee of Italy "Abilitazione scientifica nazionale alle funzioni di professore di prima e seconda fascia" (2013/2014: >500 candidates)

Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?hl=de&user=K8v3v30AAAAJ) (Feb. 2019) h = 47,
8672 citations
186 peer-reviewed publications

Most important grants since 2011

2018: From Cloud to Ground: Snow Deposition in Extreme Environments, SNSF (1.27 m CHF).

2017: PROSNOW: Seasonal prediction and management of snow in Alpine ski resorts, H2020 EU grant,

(0.47 m CHF – part Lehning only).

2014: Snow-atmosphere interactions driving snow accumulation and ablation in an Alpine catchment (0.779 m CHF).

Innovation, technology transfer & impact on society

Spin-Off company AlpSolut providing services on snow and avalanche danger warning for mountain communities.

Suite of open-source models for snow and hydrology (models.slf.ch).

Main cooperative work / collaborative projects

Local surface mass balance in East Antarctica (Losumea): Joint project with Prof. A. Berne and further international partners to measure and model snow precipitation, snow transport, sublimation and snow deposition in the Extreme Environment of Antarctica.

Davos2019: Joint field campaign in Davos with ETHZ (Dr. Henneberger, Prof. Lohmann), EPFL (Prof. Nenes, Prof. Berne), Tropos Leipzig, Uni Basel and MeteoSwiss to measure snow formation processes in mixed phase clouds as well as the near surface processes from snow transport to snow deposition.

PROSNOW: EU H2020 project with partners from France, Austria, Italy and Germany to optimize snow management in Alpine ski areas based on short- and long-term (seasonal) forecasts of weather.

Key publications since 2011

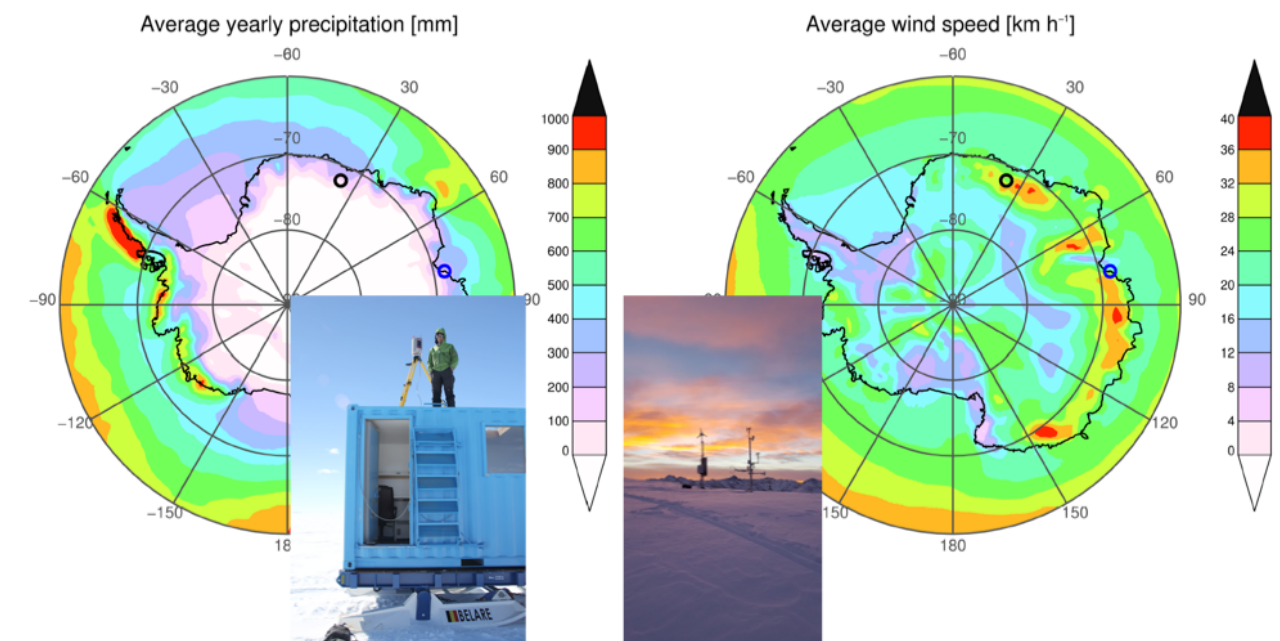
Kahl, A., Dujardin J., and Lehning, M.: The bright side of PV production in snow-covered mountains, PNAS, 2018, <https://doi.org/10.1073/pnas.1720808116>.

Sommer, C. G., Wever, N., Fierz, C., and Lehning, M.: Investigation of a wind-packing event in Queen Maud Land, Antarctica, Cryosphere, 12, 2923-2939, 2018, <https://doi.org/10.5194/tc-12-2923-2018>.

F. Comola, F. and Lehning, M.: Energy- and momentum-conserving model of splash entrainment in sand and snow saltation, Geophysical Research Letters, vol. 44, no 3, p. 9. 1601-1609, 2017. <https://doi.org/10.1002/2016GL071822>.

N. Wever, C. Fierz, C. Mitterer, H. Hirashima, et M. Lehning: Solving Richards Equation for snow improves snowpack meltwater runoff estimations in detailed multi-layer snowpack model, Cryosphere, vol. 8, no 1, p. 18. 257-274, 2014, <https://10.5194/tc-8-257-2014>.

M. Lehning, T. Grünwald, and Schirmer, M.: Mountain snow distribution governed by an altitudinal gradient and terrain roughness, Geophysical Research Letters, vol. 38, no 19, 2011, <https://doi.org/10.1029/2011GL048927>.



Christian Ludwig

Adjunct Professor EPFL-PSI Professorship on Solid Waste Treatment, Ludwig Group (GR-LUD)

www.psi.ch/cpm

MSc Chemistry (1990, University of Berne, Switzerland)

PhD Geochemistry (1993, University of Berne, Switzerland)

Career trajectory

2005 to date	Head, Joint EPFL-PSI Professorship on Solid Waste Treatment (LUDwig GRoup at EPFL: GR-LUD)
2000 to date	Head, Group of Chemical Processes and Materials (CPM) at Paul Scherrer Institute (PSI)
1997 - 1999	Senior Scientist, Element Cycles Section at PSI
1995 - 1997	Research Fellow, Department of Resource and Waste Management at EAWAG
1993 - 1995	Post-doc Fellow, Department of Land, Air, and Water Resources (LAWR) at UC Davis

Research mission & relevance

With the significant technological and industrial developments over the past 100 years, energy and materials requirements strongly increased to respond to the constantly evolving demands which do impact natural materials cycles. Our group's areas of expertise lies, in particular, in :

- Resource and energy efficient clean technologies
- Controlling the fate of valuable and/or harmful materials
- Recycling, recovery and reuse of raw materials

EPFL-PSI joint professorship on Solid Waste Treatment generally aims at supporting and finding optimal solutions for sustainable resources management.

At EPFL, the LUDwig GRoup focuses its research activities in the domain of hybrid and integrated technologies related to civil and environmental engineering. In contrast, the Chemical Processes and Materials Research Group at PSI focuses its activities on material science and engineering. However, relevant cross topics within both groups are connected to analytical chemistry and nano-science.

Since 2005, EPFL's team additionally focused their research interests on microalgae production technologies for applications in the bioenergy, waste water treatment, food, and health sector.

Honors, memberships, scientific community services

Memberships:

Member of the Research Commission of the Federal Office for the Environment, "Beratendes Organ des BAFU für Umweltforschung (OFU)", since 2019

Member of search committee for a professorship (with decision rights), 2019

Member of the board of SWALG (the Swiss Algae Consortium Association), since 2018



Bibliometric indicators

Personal indicators (Google Scholar):

Citations: 3824 (GS)

h-index: 34 (GS)

i10-index: 63 (GS)

Group's indicators (WoS):

Total Articles in Publication List: 170

Articles With Citation Data: 151

Sum of the Times Cited: 5262

Average Citations per Article: 34.85

h-index: 40

Most important grants since 2011

REE-Recycling („Rückgewinnung von hochreinen SE-Metalloxiden aus Leuchtstoffpulver“), BAFU and industrial partners

Bio-synthetic Natural Gas from Microalgae (SunCHem), swisselectric research and CCEM

NanoAir - Online coupling of a scanning mobility particle sizer (SMPS) to an inductively coupled plasma mass spectrometer (ICP-MS) for size fractionated and chemical analysis of nanoparticles in aerosols", SNF and CCMX

Innovation, technology transfer & impact on society

Teaching: I am the co-author of a successful international standard teaching book on Solids Waste Engineering.

Law: Our research has influenced the content of the Swiss Waste Law.

Spin-offs: In 2018 two out of three awards for Founder Fellowships at PSI were assigned to co-workers of my group. These examples show the application potential of some of our work. One project focuses on dental implants whereas the other on rare earth elements recovery.

Honors, memberships, scientific community services (continued)

Member of Wuhan's International Advisory Council (Official advisor to the mayor of Wuhan, 2014-2017). Wuhan is a Chinese City with more than 10 mio. inhabitants.

Member of jury for PhD theses and master theses evaluations inside and outside of EPFL

International Conferences

World Resources Forum 2017, Geneva, Switzerland (450 attendees), Scientific Chair of the conference

World Resources Forum 2015, Davos, Switzerland (>600 attendees), Scientific Chair of the conference

World Resources Forum 2014, Arequipa, Peru (>1000 attendees), Scientific Chair of the conference

World Resources Forum 2013, Davos, Switzerland (>400 attendees), Scientific Chair of the conference

World Resources Forum 2012, Beijing, China (700 attendees), Scientific Co-Chair of the conference

International ITEP conference 2012, Kutaisi Georgia, Member of international scientific committee

International Scientific and Practical Conference – Sustainable Municipal Solid Waste Management in Eastern Europe –

Future Perspectives, 2011, Kiev, Ukraine, Member of international scientific committee

Fray International Symposium 2011, Cancun, Mexico, Member of the international organizing committee

World Resources Forum 2011, Davos, Switzerland (ca. 350 attendees), Scientific Chair of the conference

Main cooperative work / collaborative projects

SunCHem and PAWaSto (CCEM projects)

NanoFil, CerInk, NanoCoat (Swiss Nanoscience Institute projects)

SCCER BIOSWEET, including activities at the Energy Systems Integration Platform at PSI (Innosuisse project)

Key publications since 2011

Foppiano, D., Tarik, M., Müller Gubler, E., Ludwig, Chr., Emissions of Secondary Formed ZnO Nano-Objects from the Combustion of Impregnated Wood. An Online Size-Resolved Elemental Investigation, Environmental Science and Technology, 52:2, (2018) 895-903

Pilger, F., Testino, A., Carino, A., Proff, Chr. Kambolis, A. Cervellino, A., Ludwig, Chr., Size control of Pt clusters on CeO2 nanoparticles via an incorporation-segregation mechanism and study of segregation kinetics, ACS Catalysis, 6 (2016) 3688-3699

Lucchini, A. Mattia, Testino, A., Kambolis, A., Proff, Chr., Ludwig, Chr., Sintering and coking resistant core-shell microporous silica - nickel nanoparticles for CO methanation: towards advanced catalysts production, Applied Catalysis B: Environmental 182 (2016) 94-101

Walser, T, Limbach, L.K., Brogioli, R., Erismann, E., Flamigni, L.3, Hattendorf, B., Juchli, M., Krumeich, F., Ludwig, Chr., Prikopsky, K., Rossier, M., Saner, D., Sigg, A., Hellweg, S., Günther, D., Stark, W.J, Persistence of engineered nanoparticles in a municipal solid-waste incineration plant, Nature Nanotechnology 7 (2012) 520-524

Steubing, B., Zah, R.; Ludwig, Chr., Heat, electricity, or transportation? The optimal use of residual and waste biomass in Europe from an environmental perspective, Environmental Science and Technology, 46 (2012) 164-171



Alcherio Martinoli

Associate Professor
Distributed Intelligent Systems and Algorithms
Laboratory (DISAL)

disal.epfl.ch

Diploma Electrical Engineering (1992, ETH Zurich, Switzerland)
PhD Computer Science (1999, EPFL, Switzerland)

Keywords

Distributed robotics, swarm robotics, swarm intelligence, sensor and actuator networks, distributed cyber-physical systems, intelligent vehicles, environmental monitoring

Career trajectory

1999-2001	Postdoctoral Fellow, EE, Caltech, Pasadena, USA
2001-2003	Senior Research Fellow, EE, Caltech, Pasadena, USA
2003-2008	SNSF Assistant Professor, IC, EPFL
2008 to date	Associate Professor, ENAC, EPFL
2012-2018	Director Doctoral Program in Robotics, Control, and Intelligent Systems

Research mission & relevance

DISAL's research mission focuses on the development of design, modeling, control, and optimization methodologies for distributed, intelligent systems. A special emphasis is currently set on distributed cyber-physical systems such as multi-robot systems, sensor and actuators networks, and intelligent vehicles. Our expertise allow us to both design innovative mechatronic hardware as well as develop distributed algorithms leveraging control and estimation methods as well as machine-learning techniques. The strengths of the laboratory lie in the capability to close the loop between experiments and theory, and to tackle indoor and outdoor applications relevant for ENAC.

Honors, memberships, scientific community services

2009 to date	steering committee member Transportation Center, EPFL
2009-2012	management committee member NCCR Mobile Information and Communication Systems (MICS), EPFL
2010-2013	scientific committee member NCCR Robotics
2008 to date	editorial board member Swarm Intelligence Journal
2006 Best	Teacher Award, IC School, EPFL
2016 Best	Teacher Award, SIE, EPFL

Best Paper Award at DARS 2006, Best Poster Award at DARS 2016, finalist at DARS 2010, DARS 2016, AAMAS 2010, IROS 2018
Multiple recognitions to advised PhD Theses: Grégory Mermoud (2013 Georges Giralt PhD Award runner-up), Amanda Prorok (2014 ABB PhD Award), Bahar Haghighat (2018 EDRS Thesis Distinction)
Chairing of technical events: IEEE SIS 2005 (general co-chair), ANTS 2006 (technical co-chair), DARS 2010 (general co-chair), DARS 2016 (technical co-chair)



Bibliometric indicators

[Google Scholar](https://scholar.google.com/citations?hl=fr&user=alcherio.martinoli) (Feb 2019) h= 43, 19319 citations

203 peer-reviewed publications (111 since 2011)

4 edited books (paper collections)

Most important grants since 2011

3DNoseNet – 3D Odor Distribution Mapping and Source Localization using a Heterogeneous Mobile Sensor Network in Realistic Environmental Conditions, SNSF

A Flexible Underwater Distributed Robotic System for High-Resolution Sensing of Aquatic Ecosystems, SNSF

OpenSense II – Crowdsourcing High-Resolution Air Quality Sensing, NanoTera.ch

Innovation, technology transfer & impact on society

Thanks to the support of multiple grants (NCCR-MICS Spin Fund, CTI Feasibility project, FEEL Foundation) the start-up company Hydromea SA was created in 2014 (underwater robotics)

Regular involvement in open-source initiatives for research and education (e.g., e-puck educational robot, several thousands of units sold worldwide; SwisTrack tracking software for multi-unit systems).

Thanks to the OpenSense I and II projects, gathered a large dataset of air quality in urban settings (several hundreds of millions of data, multiple modalities over three years, two deployments on public transportation vehicles in Lausanne and Zurich)

Main cooperative work / collaborative projects

European Commission, FP7 STREP: AutoNet2030 – Cooperative Systems in Support of Networked Automated Driving by 2030. In addition to EPFL, academic project partners are: ICCS (Greece), Mines Paris Tech (France), TU Dresden (Germany); industrial partners are: SCANIA (Sweden), Hitachi Europe (France), Centro Ricerche Fiat (Italy), Broadbit (PME, Slovakia), and BASELABS (PME, Germany), 36 months, 2013-2016.

European Commission, FP7 STREP project: MOnarCH – Multi-Robot Cognitive Systems Operating in Hospitals. In addition to EPFL, academic project partners are IST (Portugal), Örebro University (Sweden), University Carlos III (Spain), University of Amsterdam, (Netherlands), Portuguese Oncological Institute at Lisbon (Portugal); industrial partners are: SelfTech (PME, Portugal), IdMind (PME, Portugal), 38 months, 2013-2016. The collaboration with IST Lisbon has been further promoted by the IST-EPFL Joint Doctoral Program (5 co-advised PhD students up to date).

SNSF, NCCR Robotics, academic partners are EPFL (leading house), ETHZ, University of Zurich, IDSIA (Lugano, Switzerland); DISAL participated to the first phase of the center, 48 months, 2010-2014 but collaboration is still very active at EPFL educational level (Master Program in Robotics; Doctoral Program in Robotics, Control, and Intelligent Systems).

Key publications since 2011

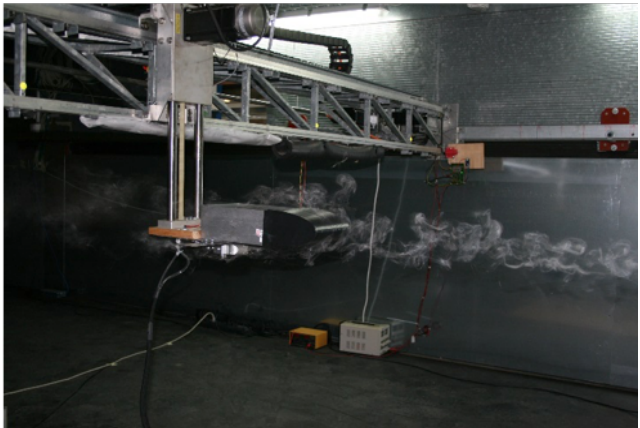
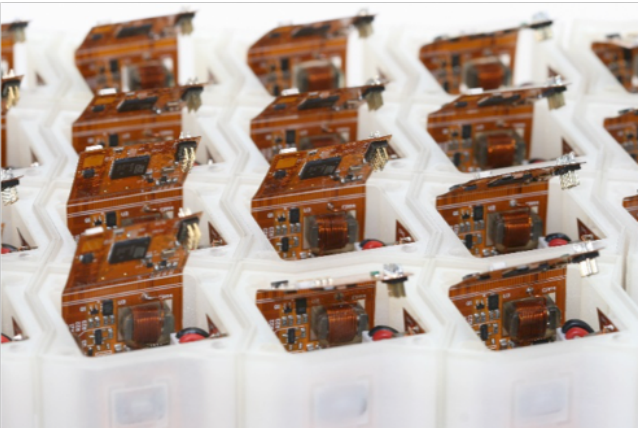
Quraishi A., Bahr A., Schill F., and Martinoli A., “Autonomous Feature Tracing and Adaptive Sampling in Real-World Underwater Environments”, Proc. of the IEEE Int. Conf. on Robotics and Automation, May 2018, Brisbane, Australia, pp. 5699-5704.

Haghighat B. and Martinoli A., “Automatic synthesis of rulesets for programmable stochastic self-assembly of rotationally symmetric robotic modules”, Swarm Intelligence Journal, 11(3-4): 243-270, 2017.

Marjovi A., Arfire A., and Martinoli A., “Extending Urban Air Pollution Maps beyond the Coverage of a Mobile Sensor Network: Data Sources, Methods, and Performance Evaluation,” Proc. of the Int. Conf. on Embedded Wireless Systems and Networks, February 2017, Uppsala, Sweden, pp. 12-23.

Vasic V. and Martinoli A., “A Collaborative Sensor Fusion Algorithm for Multi-object Tracking using a Gaussian Mixture Probability Hypothesis Density Filter,” Proc. of the 2015 IEEE Intelligent Transportation Systems Conference, September 2015, Las Palmas de Gran Canaria, Spain, pp. 491-498.

Prorok A. and Martinoli A., “Accurate Indoor Localization with Ultra-Wideband using Spatial Models and Collaboration”. Special issue on Experimental Robotics, Desai J., Dudek G., Khatib O. and Kumar V., editors, Int. Journal of Robotics Research, 33(4): 547-568, 2014.



Anders Meibom

Full Professor
Laboratory for Biological Geochemistry (LGB)

lgb.epfl.ch

Ph.D. in physics, Odense University, August 1997.

Keywords

Environmental Bio-Geo-Chemistry, Sub-cellular stable isotope imaging, NanoSIMS, Biomineralization by marine organisms, Cell metabolism, Isotope Geochemistry and Cosmochemistry

Career trajectory

Since 2012:	Full professor, EPFL
Since 2014:	Full professor ad personam, University of Lausanne
2015–2017:	Director, Institute of Environm. Engineering, EPFL
2007–2011:	Full professor, Museum National d'Histoire Naturelle, Paris
2006–2011:	Director of the French National NanoSIMS analytical facility
2005–2007:	Associate professor, Museum National d'Histoire Naturelle Paris
2000–2005:	Research Associate, Geological & Environmental Sciences, Stanford University
1997–2000:	PostDoc, Hawaii Institute for Geophysics and Planetology, Univ. of Hawaii

Research mission & relevance

Scientific themes in the LBG are situated at the junction between isotope geochemistry and biology. We investigate biological processes of relevance to the (paleo-)environment at the sub-cellular level using cutting-edge micro-analytical tools. Current research topics include: Biogenic carbonate paleo-proxy reliability and metabolic processes in symbiotic marine organisms (and how these processes are affected by global climate change).

Honors, memberships, scientific community services

Teacher of the Year award for ENAC, for teaching "Introduction to Geology" in the Academic year 2013-2014.
2008: European Mineralogical Union Research Excellence Medal.
Asteroid 1981 UV21 named «Meibom».
2014–2017: Chairman of the Academic Evaluation Committee for promotions at the School of Architecture, Civil and Environmental Engineering, EPFL.
2009–2012: CNRS, Comité National Section 18, Appointed Member.



Bibliometric indicators

(Jan. 2019) h = 45, 6500 citations
130 peer-reviewed publications (57 since 2011)

Most important grants since 2011

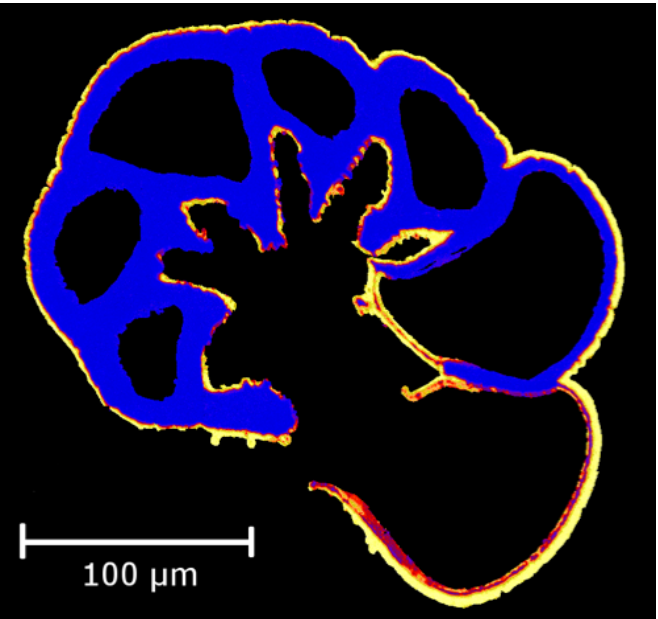
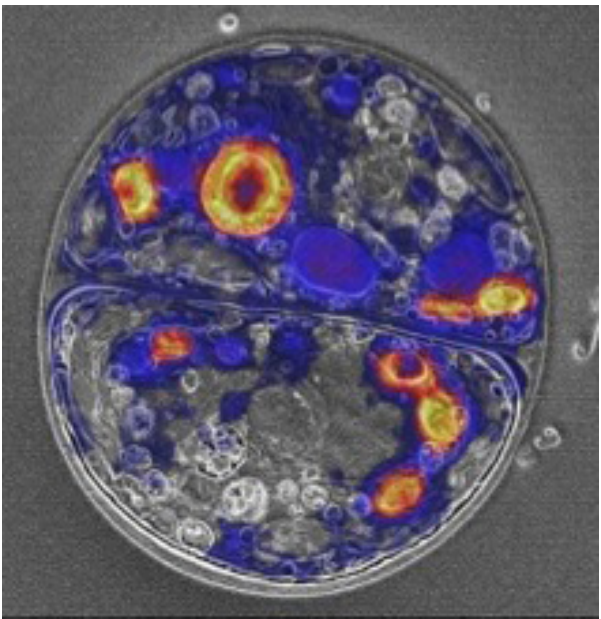
BioCarb, ERC Advanced Grant 2011-2015.
UltraPal, ERC Advanced Grant 2019-2024.

Main cooperative work / collaborative projects

Coral physiology and metabolism under climate stress (Israel and France)
Biomineralization of corals and other marine organisms (France, Poland)
Biocalcite paleo-proxies (France, Poland, Switzerland)

Key publications since 2011

Bernard S., Daval D., Ackerer P., and Meibom A. (2017), "Buriel-induced oxygen isotope re-equilibration of fossil foraminifera explains ocean paleotemperature paradoxes", Nature Communications 8, 1134, DOI: 10.1038/s41467-017-01225-9.
Krueger T., Mashiah N., Bodin J., Giovani M.-E., Escrig S., Meibom A., and Fine M. (2017), "Common reef-building coral in the Northern Red Sea corals resistant to elevated temperature and acidification", Royal Society Open Science, 4: 170038. <http://dx.doi.org/10.1098/rsos.170038>.
Kopp C., Domart-Coulon I., Escrig S., Humbel B. M., Hignette M., and Meibom A. (2015), "Subcellular investigation of photosynthesis-driven carbon and nitrogen assimilation and utilization in the symbiotic reef coral Pocillopora damicornis", mBio 6(1):e02299-14. doi:10.1128/mBio.02299-14.
Pernice M., Meibom A., Van de Heuvel A., Kopp C., Domart-Coulon I., Hoegh-Guldberg O., Dove S. (2012), «A single cell view of ammonium assimilation in the reef-building coral Acropora Aspera», The ISME Journal: Multidisciplinary Journal of Microbial Ecology, 1-11.
Stolarski J., Kitahara M. V., Miller D. J., Cairns S. D., Mazur M. and Meibom A. (2011)
"The ancient evolutionary origins of Scleractinia revealed by azooxanthellate Corals", BMC Evolutionary Biology 11:316, doi:10.1186/1471-2148-11-316.



Bertrand Merminod



Full Professor Geodetic Engineering Laboratory (TOPO)

topo.epfl.ch

1987 - 1989	University of New South Wales, Australia, Master of surveying (by research)
1983	State exam as registered land surveyor
1976 - 1982	EPFL, rural engineering and land surveying

Keywords

acquisition techniques for spatial data, adjustment calculus, navigation algorithms, satellite positioning, kinematic applications, deformation monitoring

Career trajectory

06.95 -	EPFL: Teaching, Research and Services
08.93 - 05.95	Leica AG, Aerial Visionics, Heerbrugg : product manager of the navigation system for aerial photography
04.89 - 07.93	Dept of Lands, Surveys & Physical Planning, Lesotho (Southern Africa): geodetic surveyor and head of a topographic map revision project
01.87 - 03.89	UNSW, Sydney, Australia: satellite geodesy and navigation (sponsored by SNF-SATW)
05.83 - 12.86	Walter Schneider AG, Chur: engineer specialized in the deformation monitoring of dams, bridges and unstable slopes

Research mission & relevance

Our core lecturing and research activity are in Geomatics engineering. Based on the scientific framework of Geodesy this is a key information technology of the 21st century that integrates acquisition, modelling, analysis, and management of spatially referenced data.

These data are used for a wide range of applications, such as surveying, positioning and navigation as well as digital imaging and surface scanning and other remote sensing techniques. This input is crucial for informed decision making based on Geographic Information Systems (GIS). In an increasing manner, the know-how at TOPO includes competencies often associated with robotics, such as integration and calibration of sensors.

Honors, memberships, scientific community services

International activities

2004 -	Fédération Internationale des Géomètres, Commission 2, Education, Swiss delegate
2015 - 2018	European Group of Institutes of Navigation, Chairman

National activities

2009 - 2018	Institute of Navigation, President
2003 -	Swiss Academy of Technical Sciences, Individual Member
2018 -	Swiss Geodetic Commission, affiliated with the Swiss Academy of Natural Sciences, Member

Most important grants since 2011

- «Léman-Baïkal» remote sensing aspects of large lakes, Centre de limnologie EPFL, approx. 300 kCHF
- «Life under the Ice» remote sensing over Lake Onego, Centre de limnologie EPFL, approx. 150 kCHF
- «DODO» a DrOne DuO for Mapping in GNSS Denied Areas, Run by Dr. Davide Cucci, EPFL ENAC InnoSeed program, 45 kCHF

Innovation, technology transfer & impact on society

- A post-doc and a PhD student have created the start-up company Gamaya specialised in hyperspectral imagery for monitoring crops: early detection of diseases and targeted use of fertilisers. approx. 15 collaborators
- Two CTI – Innosuisse projects with the drone manufacturer senseFly: modelling of the flight behaviour, real-time quality control of the mapping progress. Run by Dr. Jan Skaloud, approx. 400 kCHF.

Honors, memberships, scientific community services (continued)

Activities within EPFL

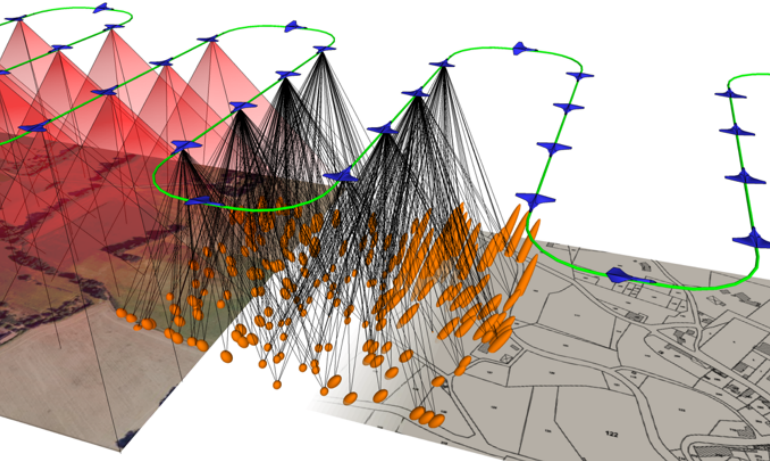
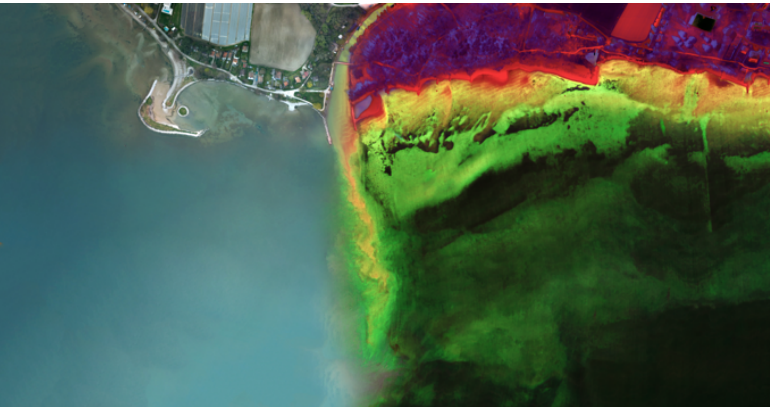
- 2010 - 2014 EPFL Assembly, Delegate of the teaching staff

Main cooperative work / collaborative projects

- [MapKITE](#) is a H2020 funded consortium of ten partners from six European countries and Brazil: GeoNumerics, TopScan, GRID-IT, ALTAIS, DEIMOS Engenharia, UAVision, CATUAV, EPFL, Engemap Engenharia and UNESP. Tandem corridor mapping with a car as moving target and a drone as guardian angel was demonstrated. EPFL is the only academic partner. The technology is patented.
- A [MOOC on Geomatics](#) has been developed to introduce flipped classes in first year teaching. Students can learn the theory anywhere at their own pace while practicals in groups can be done during some contact hours. Some modules are included in EPFL's programme MOOCs for Africa.

Key publications since 2011

- K. Barbieux; A. Charitsi; B. Merminod : Icy lakes extraction and water-ice classification using Landsat 8 OLI multispectral data; International Journal Of Remote Sensing. 2018. DOI : 10.1080/01431161.2018.1447165.
- P.-Y. Gilliéron; B. Merminod; J. Zufferey : Training in Mapping Changes on an Archaeological Site. 2018-05-07. FIG Congress 2018, Istanbul, Turkey, May 6-11, 2018.
- K. Barbieux; V. Nouchi; B. Merminod : Airborne hyperspectral sensor radiometric self-calibration using near-infrared properties of deep water and vegetation. 2016. Conference on Remote Sensing of the Ocean, Sea Ice, Coastal Waters, and Large Water Regions, Edinburgh, Scotland, Sep 26-27, 2016. DOI : 10.1117/12.2241251.
- P. Clausen; J. Skaloud; P.-Y. Gilliéron; B. Merminod; H. Perakis et al. : Position accuracy with redundant MEMS IMU for road applications; European Journal of Navigation. 2015.
- D. Constantin; M. S. P. Cubero-Castan; Y. Akhtman; B. Merminod : Télédétection pour l'agriculture de précision par caméra hyperspectrale miniature; Géomatique Suisse. 2015.



Athanasios Nenes

Full Professor

Laboratory of Atmospheric Processes and their Impacts (LAPI)

lapi.epfl.ch

Diploma, Chem.Eng. (1993, NTU of Athens, Greece)

M.S., Atmos. Chem. (1997, University of Miami, USA)

Ph.D., Chem.Eng. (2003, California Institute of Technology, USA)

Keywords

Air Quality, Public Health, Airborne Pollutants, Atmospheric Aerosol, Biogeochemical Cycles, Clouds, Climate, Modeling, Instrumentation, Laboratory studies, Field studies, Data Mining

Career trajectory

2018 to date	Full Professor, EPFL
2008 to date	Affiliated Scientist, ICE-HT/FORTH, Greece
2015-2016	Visiting Professor, California Institute of Technology
2011-2018	Professor, Georgia Institute of Technology, USA
2008-2011	Associate Professor, Georgia Institute of Technology, USA
2002-2008	Assistant Professor, Georgia Institute of Technology, USA

Research mission & relevance

Our lab studies atmospheric processes and their impacts on climate, health and ecosystems through a combination of theory, measurement and modelling. A central focus in our research program is atmospheric particulate matter (aerosols), and studies often combine of observations, theory and modeling. We are involved in the development of aerosol instrumentation, and measurement techniques required to study processes and constrain parameters. Our group develops open-source modules routinely used in air quality and climate models, as well as tools for advanced sensitivity analysis of large codes and model reduction/data discovery through emulation and network analysis. We are also heavily involved in field measurement programs on understanding the climate and health impacts of ambient aerosol.

Honors, memberships, scientific community services

Member of the UN/WMO on the GESAMP WG 38 on “The Atmospheric Input of Chemicals to the Ocean”, co-author of the 2016 US National Academies Report on the “Future of. Atmospheric Chemistry Research”. Recipient of a 2016 ERC CoG, the AGU Ascent award, the Whitby and Friedlander Awards of the AAAR, the Vaughn Lectureship by Caltech, the Houghton Award by the American Meteorological Society, NASA Group Achievement Awards, Dean’s Distinguished Lecture from Columbia University, NASA New Investigator Program Award; National Science Foundation CAREER Award, ACCESS Colloquium. Atmospheric Sciences secretary of the AGU, currently president of Atmospheric Sciences section of the EGU. Committee on Nucleation and Atmospheric Aerosols, Editor of Atmospheric Chemistry and Physics.



Bibliometric indicators

ISI Web of Science (Mar. 2019) h = 60
12,954 citations

265 peer-reviewed publications
(175 since 2011)

1 book, 1 US National Academies Report

Most important grants since 2011

Sources and Properties of Arctic Aerosol that affect its Regional Climate (SPAARC), Swiss Polar Institute

European Research Council
Consolidator Grant PyroTRACH:
Pyrogenic TRansformations Affecting
Climate and Health.

Constrained aerosol forcing for improved climate projections (FORCeS), H2020 Research and Innovation Action (Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement).

Innovation, technology transfer & impact on society

Roberts, G., and Nenes, A., «Stream-Wise Thermal Gradient Cloud Condensation Nuclei Chamber.», US Patent No. 7,656,510 (issued 2 February, 2010).

[ISORROPIA aerosol codes](#) used in air quality and atmospheric models worldwide.

Developer of cloud modules used in regional and global climate models worldwide.

Honors, memberships, scientific community services (continued)

Science Board, Greek Institute for Research and Development, Pacific Northwest National Lab Aerosol-Climate Initiative External Advisory Board, ETH BACCHUS Scientific Advisory Board, DOE Atmospheric Radiation Measurement Climate Research Facility Science Board

Main cooperative work / collaborative projects

FP7-PEOPLE-2013-IRSES: Regional climate-air quality interactions (REQUA).

H2020 Research and Innovation Action, Constrained aerosol forcing for improved climate projections (FORCeS)

NASA Earth Venture Projects (SEAC4RS, KORUS-AQ, ORACLES, CAMP2EX)

Key publications since 2011

Sullivan, S.C., Lee, D., Oreopoulos, L., and Nenes, A (2016) The role of updraft velocity in temporal variability of cloud hydrometeor number, Proc.Nat.Acad.Sci., 113, 21, 5781-5790, doi: 10.1073/pnas.1514043113

Ito, T., Nenes, A., Johnson, M. S., Meskhidze, N., Valett, J., and Deutsch, C. (2016) Late 20th century deoxygenation of the tropical Pacific enhanced by aerosol pollutants, Nature Geosci., doi:10.1038/ngeo2717

Weber, R.J., Guo, H., Russell, A.G., Nenes, A. (2016) High aerosol acidity despite declining atmospheric sulfate concentrations over the past 15 years, Nature Geosci., doi:10.1038/ngeo2665

Raatikainen,T., Nenes,A., Seinfeld, J. H., Morales,R., Moore, R. H., Latham, T. L., Lance, S., Padro, L. T., Lin, J. J., Cerully, K., Bougiatioti, A., Cozic, J., Ruehl, C., Chuang, P. Y., Anderson, B., Flagan, R.C., Jonsson, H., Mihalopoulos, N., and J. N. Smith (2013) Worldwide data sets constrain the water vapor uptake coefficient in cloud formation, Proc.Nat.Acad.Sci., 10.1073/pnas.1219591110

DeLeon-Rodriguez, N., Latham, T.L., Rodriguez, L.M., Barazesh, J.M., Anderson, B.E., Beyersdorf, A.J., Ziemba, L.D., Bergin, M., Nenes, A., Konstantinidis, K.T. (2013) The microbiome of the upper troposphere: species composition and prevalence, effects of tropical storms, and atmospheric implications, Proc.Nat.Acad.Sci., doi: 10.1073/pnas.1212089110



Fernando Porté-Agel

Full Professor

Wind Engineering and Renewable Energy Laboratory (WiRE)

wire.epfl.ch

BSc Environmental Engineering (1992, Universidad Politécnica de Cataluña, Spain)

MSc Hydrologic Engineering (1995, IHE, Delft, The Netherlands)

PhD Environmental Engineering (1999, Johns Hopkins University, USA)

Keywords

Environmental fluid dynamics, turbulence, computational fluid dynamics, atmospheric boundary layer, wind energy.

Career trajectory

2000-2005	Assistant Professor, St. Anthony Falls Laboratory, Department of Civil Engineering, University of Minnesota, Minneapolis, MN, USA
2005-2009	Associate Professor, St. Anthony Falls Laboratory and Department of Civil Engineering, University of Minnesota, Minneapolis, MN, USA
2010 to date	Full Professor, EPFL
2012-2018	Director Doctoral Program in Mechanics, EPFL

Research mission & relevance

The main goal of our research is to improve our understanding and ability to predict turbulent transport of momentum and scalars (e.g., heat, water vapour, pollutants) in environmental flows, with emphasis on the atmospheric boundary layer and wind energy systems. Improved descriptions of those processes are developed and used in engineering, environmental and wind energy applications (e.g., weather, air quality and wind resource assessment models).

Our research involves a synergistic combination of experimental (field and wind tunnel) work, numerical modelling (large-eddy simulation) and theoretical development.

Specific areas of research include: Wind energy, flow over complex terrain, flow in urban canopies, large-eddy simulation, thermally-stratified flows, boundary-layer turbulence.

Honors, memberships, scientific community services

Associate editor: Journal of Turbulence

Associate editor: Boundary-Layer Meteorology

Associate editor: Energies

Polysphere Teaching Award, EPFL (2017)

Teaching Award IIE, EPFL (2015)

Member European Academy of Wind Energy



Bibliometric indicators

Google Scholar (Dec 2018): h = 45, 6275 citations

118 peer-reviewed publications (76 since 2011)

Most important grants since 2011

“TomoPIV and LDV systems for the EPFL ENAC wind tunnel: Towards improved modeling of atmospheric turbulence” SNSF – R’EQUIP

“Towards improved predictionso fturbien wakes in wind farms: An integrated approach” SNSF

“SCCER-FURIES: SCCER Future Swiss Electrical Infrastructure”, CTI

Innovation, technology transfer & impact on society

Wind Farm Optimization Models

Analytical models of wind turbine wake flows

Parameterizations of wind farms in weather models

Main cooperative work / collaborative projects

“SCCER-FURIES: SCCER Future Swiss Electrical Infrastructure”, CTI

“WindLand: Improved wind energy assessment based on coupled wind, terrain and vegetation modelling”, SNSF

“Project Greentech” – Improved Reliability of Large Turbines and Wind Farms”, Eurotech

Key publications since 2011

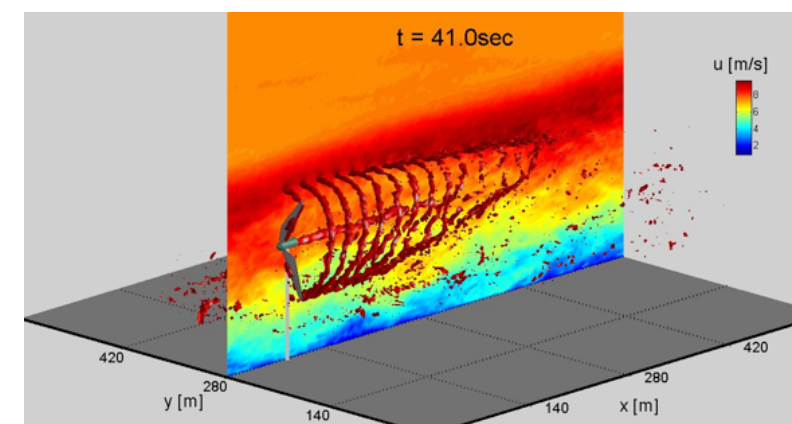
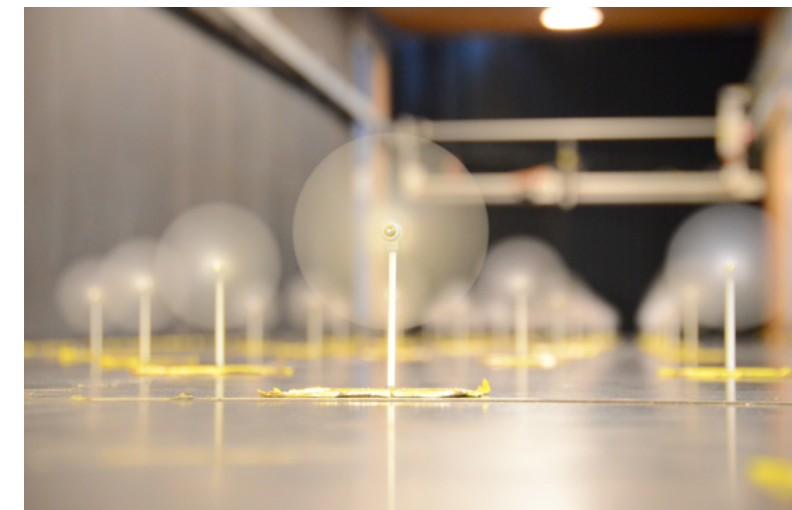
Shamsoddin A., Porté-Agel F. (2018) “Wind turbine wakes over hills” Journal of Fluid Mechanics 855:671–702, DOI: 10.1017/jfm.2018.653.

Fuertes F.C., Markfort C., Porté-Agel F. (2018) “Wind Turbine Wake Characterization with Nacelle-Mounted Wind Lidars for Analytical Wake Model Validation” Remote sensing 10, 668, DOI: 10.3390/rs10050668.

Bastankhah M., Porté-Agel F. (2017) “Wind tunnel study of the wind turbine interaction with a boundary-layer flow: Upwind region, turbine performance, and wake region” Physics of Fluid 29:6, 065105, DOI: 10.1063/1.4984078.

Bastankhah M., Porté-Agel F. (2014) “A new analytical model for wind-turbine wakes” Renewable Energy 70:116–123, DOI: 10.1016/j.renene.2014.01.002.

Lu H., Porté-Agel F. (2013) A modulated gradient model for scalar transport in large-eddy simulation of the atmospheric boundary layer” Physics of Fluids 25, 015110, DOI: 10.1063/1.4774342.



Andrea Rinaldo

Professor of Hydrology & Water Resources Laboratory of Ecohydrology (ECHO)

echo.epfl.ch

BA+MS Engineering (hydraulic) summa cum laude (1978, University of Padova, Italy)

PhD Fluid Mechanics (1983, Purdue University, USA)

Keywords

Hydrogeomorphology. Ecohydrology. Stochastic modeling of natural phenomena. River networks as ecological corridors for species, populations and pathogens of water-borne disease. Spatial epidemiology of waterborne and water-related diseases.

Career trajectory

1985 to date	Full Professor, Italian Academic system
1986-1992	Director, Dept C&E Engineering, U of Trento (IT)
1992 to date	Professor, University of Padua (IT), since 2008 at 10%
2008 to date	Professor, ECHO/ENAC/EPFL (90% appointment)
2010-2013	Director, Environmental Eng. Institute, EPFL
1993-2001	Research Associate & Visiting Professor, MIT (USA)
2004-2006	Visiting Professor, Princeton U (USA)
2011-2016	Senior Adjunct Researcher, EAWAG (CH)
2018 to date	Fellow, Hagler Institute for Advanced Studies TAMU (US)
2019 to date	Inaugural Neil Armstrong Distinguished Visiting Fellow, Purdue University

Research mission & relevance

The main focus of the ECHO Lab is on drawing together several lines of argument to suggest that an integrated ecohydrological framework, which blends laboratory, field and theoretical work focused on hydrologic controls on biota, contributes substantially to our understanding of the function of river networks as ecological corridors. The overarching theme of ECHO deals with investigations on how the physical structure of the environment affects biodiversity, species invasions, survival and extinction, and endemic or epidemic waterborne disease infection spreads. Relations are explored from the perspective of ecosystems produced by fluvial processes and forms, whose origins and features have long been central in ECHO's interests.

Honors, memberships, scientific community services

1982	E. Munson Award, Purdue University
1984	P. Gatto Award, Accademia Nazionale dei Lincei, Rome
1999	Hydrological Sciences Award American Geophysical Union
2000	FELLOW, American Geophysical Union
2005	Dalton Medal, European Geosciences Union
2008	ERC Advanced Grant Fellowship
2010	Hydrology Days Award, Colorado State University, Fort Collins
2010	4th Prince Sultan Abdulaziz International Water Prize, Riyadh



Bibliometric indicators

[Google Scholar](#) (January 2019) h = 81, 18412 citations i10 = 208 (h=51 8072 citations i10 = 171 since 2014)

392 peer-reviewed publications 262 journal papers (WoS) (57 WoS entries since 2014)

5 books (one accepted & in print by Cambridge University Press)

Most important grants since 2011

RINEC River networks as ecological corridors (ERC Advanced Grant)

The role of environmental stochasticity and ecological patters and processes: theory and experiments (SNSF)

Optimal control of intervention strategies for waterborne disease epidemics (SNSF)

ECOPOTENTIAL Improving future ecosystem benefits through earth observations (EU H2020)

Innovation, technology transfer & impact on society

<https://actu.epfl.ch/search/echo/?page=1>

<https://echo.epfl.ch/fr/page-12894-fr-html/page-12895-fr-html/page-127629-fr-html/>

<https://echo.epfl.ch/fr/page-12894-fr-html/page-12895-fr-html/page-146051-fr-html/>

Honors, memberships, scientific community services (continued)

2014	Luigi Tartufari International Research Prize, Geosciences, Accademia Nazionale dei Lincei, Rome
2015	Distinguished Scholar Medal, ASABE, New Orleans
1995	Fellow, Istituto Veneto di Scienze Lettere ed Arti, Venice
2017 to date	IVSLA Board Member
2014 to date	Vice-President
2010	Fellow, Accademia Galileiana SSSLAA, Padua
2014	Fellow, Accademia Nazionale delle Scienze (detta dei XL), Rome
2017 to date	Vice-President & Board member
1999	Fellow, The Water Academy, Oslo
2006	Foreign Member, Royal Swedish Academy of Sciences, Stockholm
2006	Foreign Member, US National Academy of Engineering, Washington
2012	Foreign Member, US National Academy of Sciences, Washington
2018	Foreign Associate, AMERICAN ACADEMY OF ARTS & SCIENCES, Cambridge
	Doctor honoris causa (Unversité Quebec-Laval & INRS) (Canada)
2008-2014	Editor, Advances in Water Resources
2014 to date	Editor, Proceedings of the US National Academy of Sciences (PNAS)

Main cooperative work / collaborative projects

ECHO has recently pursued interdisciplinary studies on: metapopulation persistence in fluvial ecosystems and metacommunity predictions of fish diversity patterns in large river basins, in collaboration with field biologists (U Maryland, U Cantabria) and theoretical ecologists (Princeton U); the zebra mussel invasion of the Mississippi-Missouri iconic river network, in collaboration with theoretical ecologists (Politecnico di Milano, Princeton U) and ecohydrologists (Princeton U); the spread of proliferative kidney disease in salmonid fish in a Swiss prealpine catchment, a SNF SINERGIA project comprising, field, laboratory and theoretical studies carried out in collaboration with fish biologists and veterinary doctors (U Bern) and molecular biologists (EAWAG); the estimation of species distribution and abundance in river networks using environmental DNA, in collaboration with molecular biologists (EAWAG); laboratory studies on biological invasions of model species (protists, bacteria) within heterogeneous ecological corridors [where heterogeneity is embedded in the network shape (like in studies of invasions of experimental Peano networks), or in the distribution of resources (like in the case of heterogeneous phototaxis of *E. gracilis* within a led-controlled light field)], carried out in collaboration with experimental ecologists (EAWAG, U Zurich), and experts of microfluidics (ETHZ); field, laboratory and theoretical studies on fluvial network imprintings on microbial co-occurrence networks, in collaboration with stream ecologists (EPFL, Leibniz I Berlin, U Glasgow, U Vienna); field and modelling studies of the spread of schistosomiasis (an endemic macroparasitic WB disease) in Burkina Faso as a result of water resources development, carried out in collaboration with field ecologists (2ie Ouagadougou, Stanford U), epidemiologists (Swiss TPH) and theoretical ecologists (Politecnico di Milano); field, laboratory and theoretical studies on the spread of epidemic cholera in Kwa-Zulu Natal, Haiti, Senegal and South Sudan, in collaboration with environmental microbiologists (EPFL), epidemiologists (PAHO, Harvard U, Johns Hopkins U, Université Assane Seck Ziguinchor, U Montpellier, WHO South Sudan), statistical physicists (U Padova), ecohydrologists (Princeton U) and telecommunication experts tracking human mobility fluxes via mobile phones (Politecnico di Milano).

Key publications since 2011

Carraro, L., H. Hartikainen. J. Jokela. E. Bertuzzo, A. RINALDO, Estimating species distributions and abundance in river networks using environmental DNA, Proceedings of the US National Academy of Sciences PNAS, 115(46), 11724-11729, 2018
Balister, P., J. Balogh, E. Bertuzzo, B. Bollobas, G. Caldarelli, A. Maritan, R. Mastrandrea, R. Morris, A. RINALDO, River landscapes and optimal channel networks, Proceedings of the US National Academy of Sciences PNAS, 115 (26), 6548-6553, 2018
Zaoli, S., A. Giometto, A. Maritan, A. RINALDO, Covariations in ecological scaling laws fostered by community dynamics, Proceedings of the US National Academy of Sciences PNAS, 114(40), 10672-10677, 2017
Carraro, L., E. Bertuzzo, L. Mari, I. Fontes, H. Hartikainen, N. Strepparava, H. Schmidt-Posthaus, T. Wahli, J. Jokela, M. Gatto, A. RINALDO, Integrated field, laboratory and theoretical study of PKD spread in a Swiss prealpine river, Proceedings of the US National Academy of Sciences PNAS, 114(45), 11992-11997, 2017
Finger, F., T. Genolet, L. Mari, G.C. de Magny, N.M. Manga, A. RINALDO, Mobile phone data highlights the role of mass gatherings in the spreading of cholera outbreaks, Proceedings of the US National Academy of Sciences PNAS, 113 (23), 6421-6426, 2016

Kristin Schirmer

Adjunct Professor Laboratory of Environmental Toxicology (TOX)

tox.epfl.ch

Diploma Biology (1994, University of Hohenheim and Martin Luther University, Germany)
PhD Environmental Science (1997, University of Waterloo, Canada)
Habilitation and Venia legendi in Environmental Toxicology (2007, ETHZ).

Keywords

Molecular and Cellular Mechanisms of Toxicity, Aquatic Organisms, Chemical Hazard Assessment, Adverse Outcome Pathways, In Vitro Alternatives to Animal Testing, Fish Cell Lines, Biomonitoring

Career trajectory

2008 to date	Head of Department of Environmental Toxicology Eawag, Duebendorf, Switzerland.
2010 to date	Adjunct Professor, EPF Lausanne, Switzerland.
2007 to date	Lecturer for Environmental Toxicology ETH Zürich, Switzerland.
2003-2007	Head of Department of Cell Toxicology, Helmholtz Centre for Environmental Research-UFZ, Leipzig, Germany.
2001-2003	Junior Research Group Leader (UFZ)
1999-2001	Research Fellow (UFZ).
1997-1999	Postdoctoral Fellow, University of Waterloo, Canada.

Research mission & relevance

The mission of my group is to detect and understand the adaptive and toxicological responses elicited in cells of aquatic organisms upon intended or accidental exposure to chemicals and particles. Our philosophy for working on the cellular and molecular level evolves from the role of cells as initial targets of any interaction with environmental contaminants. Thus, knowledge about changes to cellular function is important for understanding and predicting the effects on a higher level of biological organization. We use the gained mechanistic knowledge in order to develop technologies that provide for process understanding, enable the prediction of effects on multi-cellular organisms based on cellular and/or computational models, or facilitate novel means for environmental monitoring. As part of these efforts, we are particularly passionate about establishing animal-free alternatives for chemical hazard assessment based on fish cell lines.

Honors, memberships, scientific community services

2017 Venture competition – New business idea: the Rainbow Biosystem (in collaboration with scientists from HES-SO Valais-Wallis). 3rd prize (CHF 15,000)
2015–2018 Member of SETAC Europe council (before: Chair of Scientific Committee and organizer of first science slam: SETAC Europe meeting in Basel, May 2014; and member of scientific committee for SETAC Europe meeting in Barcelona, May 2015)



Bibliometric indicators

Google Scholar (March 10, 2019)
h-index: 50
6547 citations
143 peer-reviewed journal articles
(78 since 2011)
17 book chapters (6 since 2011)

Most important grants since 2011

A tiered testing strategy for rapid estimation of bioaccumulation by a combined modelling - in vitro testing approach. CEFIC-LRI

New marketable in vitro assay for screening volatile and hydrophobic ingredients for their bioaccumulation potential. Swiss Commission for Technology and Innovation – CTI

Development of a fish-gut-on-chip and its response to selected stimuli. SNF

Innovation, technology transfer & impact on society

Spin-off: aQuaTox-Solutions (<https://aquatox-solutions.ch/en/home/>)

Transfer of animal-free bioassay to be adopted as international guideline (ISO 21115)

Chamber for testing permeation of hydrophobic and volatile chemicals across cell based barrier systems. Swiss provisional, filed Feb/2018

Honors, memberships, scientific community services (continued)

2014–2018 Associate Editor: Environmental Science: Nano (new journal of the Royal Society of Chemistry; since 2014) – current impact factor: 6.047; handling ≈ 150 papers per year)

Main cooperative work / collaborative projects

Establishment of animal-free alternatives to chemical hazard assessment using fish – Collaboration with industrial partners (P&G, Firmenich, Givaudan, VITO-ABS) as well as academic labs (RECETOX – Czech Republic, King's College – UK, Utrecht University – NL, Norwegian Institute for Water Research – Norway).

Development of microfluidic biochips based on fish cells (fish-on-chip) – Collaboration with Microsystems Laboratory 4 (Philippe Renaud, EPFL).

MALDI imaging of drugs in early life stages of zebrafish – Collaboration with the Zurich Institute of Forensic Medicine, University of Zurich (Thomas Krämer).

Key publications since 2011

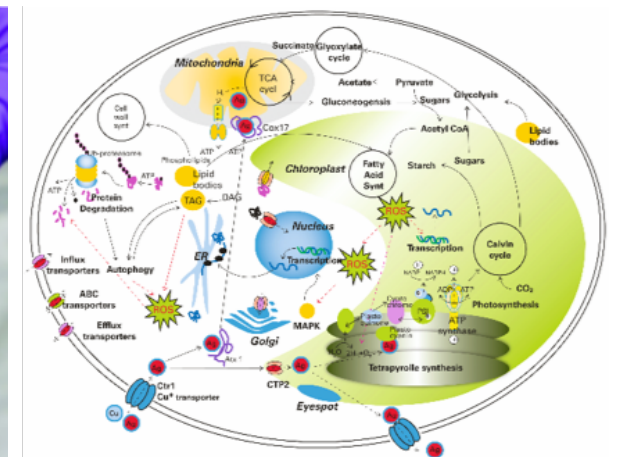
Lead JR, Batley GE, Alvarez PJJ, Croteau MN, Handy RD, McLaughlin MJ, Judy JD, Schirmer K. (2018). Nanomaterials in the Environment: Behavior, Fate, Bioavailability, and Effects—An Updated Review. Environmental Toxicology and Chemistry 37(8), 2029–2063. CRITICAL REVIEW

Minghetti M, Drieschner C, Bramaz N, Schug H, Schirmer K. (2017). A fish intestinal epithelial barrier model established from the rainbow trout (*Oncorhynchus mykiss*) cell line, RTgutGC. Cell Biology and Toxicology, Volume 33, Issue 6, pp 539–555.

Stadnicka-Michalak J, Schirmer K, Ashauer R. (2015). Toxicology across scales: Cell population growth in vitro predicts reduced fish growth. Science Advances, Vol. 1, no. 7, e1500302.

Pillai S, Behra R, Nestler H, Suter MJF, Sigg L, Schirmer K (2014) Linking of toxicity and adaptive response pathways across the transcriptome, proteome and phenotype of *Chlamydomonas reinhardtii* exposed to silver. Proceedings of the National Academy of Sciences of the United States of America (PNAS) 111, 3490–3495.

Tanneberger K, Knoebel M, Busser FJM, Sinnige TL, Hermens JLM, Schirmer K (2013) Predicting Fish Acute Toxicity Using a Fish Gill Cell Line-Based Toxicity Assay. Environmental Science & Technology 47(2): 1110-1119.



Jan Skaloud

Senior Scientist (MER) Geodetic Engineering Lab (TOPO)

topo.epfl.ch
Dip. Ing. Surveying (1992, Czech Technical University, Prague, CZ)
MSc Geomatics Eng. (1995, The University of Calgary, Canada)
PhD Geomatics Eng. (1999, The University of Calgary, Canada)

Keywords

Satellite positioning, geodesy, attitude estimation, inertial, integrated and autonomous navigation, sensor calibration and orientation, mobile mapping, UAV, estimation methods, filtering, SLAM.

Career trajectory

1999-2007	Scientists, Swiss Federal Institute of Technology Lausanne (EPFL)
2008 to date.	Senior Scientist and Lecturer (M.E.R), EPFL
2011-2012	Visiting Lecturer, The University of Calgary
2014 to date	Adjunct Professor, The University of Calgary

Research mission & relevance

The Geodetic Engineering Laboratory activity centers on monitoring and mapping the environment from mobile systems mounted on satellite, aerial and terrestrial platforms.
Our research focuses on designing novel methods and measurement systems that provide precise three-dimensional, near-continuous positioning of platform path while georeferencing and calibrating the optical (active and passive) instrumentation for geo-spatial sensing. The collected data are used for a wide range of applications, such as digital imaging and surface scanning, remote-sensing and more globally as an input to geographical information systems (GIS).

Honors, memberships, scientific community services

GNSS Leader to Watch, GPS World journal (2012)
Karl Kraus Medal – for textbook in Photogrammetry, Remote Sensing and GIS (2013)
Hansa Luftbild Price - best-paper of the year in PFG journal (2017)
Best Demo Award - 4th IEEE Int. m. on Metrology & Aerospace (2017)
Helava Award - best paper of a year in ISPRS journal (2017)
Committee member of Swiss Geodetic Commission (SGK)
Committee member of Swiss Institute of Navigation (ION-CH)
Member of US Institutes of Navigation (ION)
Chair, ISPRS, Commission 1.9
Chair, International Association of Geodesy (IAG), 4.2



Bibliometric indicators

> 90 peer-reviewed publications
Web of Science: 808 citations, h=16
Google Scholar: 2064 citations
(941 since 2014), h=25, i10=54
Research gate: 1503 citations, rg=25.5

Most important grants since 2011

Towards the next generation of self-localization and orientation of micro drones, SNSF

Planning and estimating drone-mapping accuracy in a cluttered environment, InnoSuisse

Vehicle dynamic model-based navigation for UAVs, Swiss confederation

Innovation, technology transfer & impact on society

US Patent #[US2016364990](#)
Autonomous and non-autonomous dynamic model based navigation system for unmanned vehicles.

WO Patent #[WO201120141A1](#) Dynamic network adjustment for rigorous integration of passive and active imaging observations into trajectory determination.

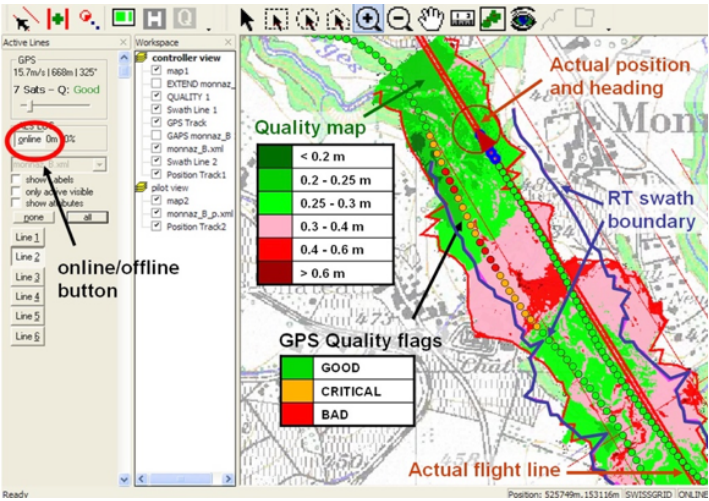
Software: Stochastic modeling via Generalized Method of Wavelet Moments ([GMWM](#)), [other](#) via TTO-EPFL

Main cooperative work / collaborative projects

Accurate and safe EGNOS-SoL navigation for UAV-based low-cost SAR operations ([CLOSE-SEARCH](#))
Kinematic airborne gravimetry using combination of satellite derived global gravity models (GOCE) with airborne-derived local models via EGNOS/Galileo/SINS ([GAL](#))
Simultaneous aerial and terrestrial total 3D mapping ([MapKITE](#))

Key publications since 2011

Guerrier, S., Skaloud, J., Stebler, Y., and Victoria-Feser, M.-P. (2013). Wavelet-variance-based estimation for composite stochastic processes. Journal of the American Statistical Association, 108(503):1021–1030
Stebler, Y., Guerrier, S., Skaloud, J., and Victoria-Feser, M.-P. (2014). The generalized method of wavelet moments for inertial navigation filter design. IEEE Transactions on Aerospace and Electronic Systems, 50(3):2269–2283
Khaghani, M., and Skaloud, J. (2016). Autonomous vehicle dynamic model-based navigation for small UAVs. NAVIGATION, Journal of The Institute of Navigation, 63(3):345–358
Cucci, D. A., Rehak, M., and Skaloud, J. (2017). Bundle adjustment with raw inertial observations in UAV applications. ISPRS Journal of Photogrammetry, Engineering and Remote Sensing, 130: 1-12
Khaghani, M. and Skaloud, J. (2018). Assessment of VDM-based autonomous navigation of a UAV under operational conditions, Robotics and Autonomous Systems, 106: 152-164.



Konrad Steffen

Full Professor Group Climate and Cryosphere

<https://www.wsl.ch/en/employees/steffen.html>

Dipl.nat.ETH, 1977

Dr.sc.nat.ETH,1984

Keywords

Polar Climate, ice sheet mass balance, sea level rise, ice sheet remote sensing, Arctic change

Career trajectory

2017 to date	Science Director, Swiss Polar Institute
2012 to date	Director, Swiss Federal Research Institute WSL
2012 to date	Professor, Inst. Atmosphere & Climate, ETH-Zürich
2012 to date	Professor, Architecture, Civil and Environmental Engineering, EPF-Lausanne
2005- 2012	Director, Cooperative Institute for Research in Environmental Sciences (CIRES), CU-Boulder
2002-2005	Deputy and Interim Director, CIRES, University of Colorado (CU)
1998-2005	Associate Director, Cryosphere and Polar Processes, CIRES
1997-2012	Professor at Dept. of Geography, University of Colorado at Boulder
1993-2012	Faculty, Program in Atmospheric and Oceanic Sciences, University of Colorado
1991-1997	Associate Professor at Dept. of Geography, University of Colorado
1991-2012	Fellow CIRES, University of Colorado at Boulder
1985-1990	Lecturer at Climate Research Group, ETH, Zürich, Switzerland

Research mission & relevance

Developing instruments and methods to monitor significant changes taking place on the Greenland ice sheet, or other polar regions, including the third vertical pole (Alpine Regions). Assessing knowledge of Arctic climate, warming, and melting dynamics to understand and predict current and future sea level variability. Organizing field expeditions to the Greenland ice sheet, to Antarctica, and other Polar Regions to measure the dynamic response of ice masses under a warming climate, and to educate graduate students

Honors, memberships, scientific community services

2009-2011	NRC Committee on Stabilization Targets for Atmospheric Greenhouse Gas Concentrations
2009 – 2012	Honorary Consul of Switzerland in Denver, certified by US Dept. of State
2010-2013	IPCC AR5 Lead Author for Cryosphere Chapter
2010-2017	Scientific Advisory Board, Alfred Wegner Institute for Polar and Marin Research



Bibliometric indicators

Thomson Reuters Research ID: C-6027-2013; h-index: 42; Sum of citation: 6080, (March 2019)

Google Scholar: h-index: 56; i10-index: 149; Sum of citation 12750, (March 2019)

Most important grants since 2011

ETH-Domain funding for Swiss Federal Research Institute WSL (ca. 60 Mio. CHF per year)

NASA Cryosphere sciences (600 k US\$)

US-SNF Greenland reserch 200 k US\$ per year

Innovation, technology transfer & impact on society

Having research partnerships with Danish Meteorological Service, the US National Ocean and Atmosphere Administration, the US National Aeronautics and Space Administration, the Federal Office for the Environment.

The public outreach includes press interviews, movie interviews, radio interviews, Werkstattgespräche with Dr. O. Stebler

(<https://vimeo.com/223723418>, <https://vimeo.com/94520236>), and more.

Honors, memberships, scientific community services (continued)

2012-2016	GCOS Observation Panel for Climate (TOPC) chair
2012-2016	World Climate Research Program, Data Panel member
2013 to date	Member, Swiss Committee on Polar and High-Altitude Research
2014 to date	Scientific Committee on Antarctic Research (SCAR) Delegate for Switzerland
2014 to date	Member ESA Climate Change Advisory Board
2014 to datet	Scientific Advisory Board Agroscope
2015 to date	Member of Advising Board Swedish Polar Research Secretariat
2016-2017	Board of Directors, Swiss Polar Institute
2017 to date	Science Director of Swiss Polar Institute
2017 to date	IPCC special report on oceanography and cryosphere, lead author
2017 to date	International Risk Governance Center, AdvisoryBoard Member
2017 to date	President Swiss Polar Project Foundation advising board

Main cooperative work / collaborative projects

Experimental climate measurements of heat fluxes and radiation balance; (RHONEX, ALPEX, 1979, 1980, 1981), (Axel Heiberg Expedition, North Water Expedition, 1975 - 1984), Tienshan, China (1986), Arctic Sea Ice Validation (1987 – 1988), Greenland ice sheet (1990-present), Larsen C ice shelf, Antarctica (2008-2011, 2014-2018

Key publications since 2011

Dutrieux, P., C. Stewart, A. Jenkins, K.W. Nicholls, H.F.J. Corr, E. Rignot, and K. Steffen, Basal terraces on melting ice shelves, Geophys. Res. Lett., 41, DOI:10.1002/2014GL060618, 2014.

Kuipers Munneke, P., S.R.M. Ligtenberg, B.PY. Noël, I.M. Howat, J.E. Box, E. Mosley-Thompson, J.R.McConnell, K. Steffen, J.T. Harper, S.B. Das, and M.R. van den Broeke, Elevation change of the Greenland ice sheet due to surface mass balance and firn processes, 1960–2014, The Cryosphere, 9, 2009–2025, 2015, www.the-cryosphere.net/9/2009/2015/doi:10.5194/tc-9-2009-2015, 2015.

Nderpour, R., M. Schwank, Ch. Mätzler,,J. Lemmetyinen, and K. Steffen, Snow Density and Ground Permittivity Retrieved 2 from L-Band Radiometry: A Retrieval Sensitivity Analysis, J. Selected Topics in Applied Earth Observations and Remote Sensing 10(7), 1939-1404, 10.1109/JSTARS.2017.2669336, 2017.

Peter Kupiers Munneki, P., D. McxGrath, B. Medely, A. Luckman, S. Bevan, B. Kulesa, D. Jansen, A. Booth, P.Smeets, B. Hubbard D. Ashmore, M. van den Broeke, H. Sevstre, K. Steffen, A. Shepherd, and N. Gourmelen, Observationally constrained surface mass balance of Larsen C Ice Shelf, Antarctica, The Cryosphere, 11, 2411–2426, 2017.

Vandecrux, B., R.S. Fausto, P.L. Langen, D. van As, M. MacFerrin, W.T. Colgan, T. Ingeman-Nielsen, K. Steffen, N.S. Jensen, M. T. Møller, and J.E. Box. Drivers of densification on the Greenland Ice Sheet Revealed by Weather Station Observations and Modelling. J. Geophys. Res., Earth Surface, 123, 2563–2576. <https://doi.org/10.1029/2017JF004597>



Satoshi Takahama



Assistant Professor, Tenure Track Atmospheric Particle Research Laboratory (APRL)

aprl.epfl.ch

BS Civil Engineering (2000, University of Texas at Austin, USA)

PhD Chemical Engineering (2005, Carnegie Mellon University, USA)

Keywords

atmospheric aerosols, spectroscopy, chemometrics, photochemical simulation, molecular dynamics simulation

Career trajectory

2006 – 2008	Postdoctoral Researcher, Scripps Institution of Oceanography, UC San Diego, USA
2009 – 2012	Assistant Project Scientist, Scripps Institution of Oceanography, UC San Diego, USA
2012 to date	Tenure Track Assistant Professor, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

Research mission & relevance

Atmospheric particles (also often referred as aerosols in an atmospheric science context) are composed of sulfate, ammonium, nitrate, elemental carbon, organic compounds, trace metals, crustal elements, and water. These particles have both anthropogenic and biogenic sources (including industrial emission, electricity generation, various combustion processes, dust, forest, residential and wildfire burning, and other origins) and can be emitted directly in particle form (primary aerosol) or formed from condensation of low-volatility products generated from gas-phase reactions (secondary aerosol).

The mission of APRL is to combine mathematical/numerical modeling, instrument development, field/laboratory experimentation, and statistical data analysis to address topics relevant for atmospheric particle research.

Honors, memberships, scientific community services

Member of Editorial Board, Aerosols and Air Quality Research (Jan 2017-present).

External reviewer for Canadian Light Source beamtime allocation proposals (2010-present).

Outstanding reviewer, American Geophysical Union (2016)

Bibliometric indicators

54 peer-reviewed publications
(37 since 2011)

Web of Science: 1,192 citations
(430 since 2011) h=21

Most important grants since 2011

“Characterization of Organic Matter in PM_{2.5} sampled on different filter materials,» Swiss Federal Office of the Environment

“Characterizing functionalization in organic aerosols,» Swiss National Science Foundation

“Investigation of molecular phenomena in aerosol-water interactions,» Swiss National Science Foundation

Innovation, technology transfer & impact on society

Open software platform for aerosol infrared spectroscopy (<http://airspec.epfl.ch>).

Development of spectroscopic techniques for cost-effective monitoring of air quality.

Main cooperative work / collaborative projects

5-year collaboration with University of California Davis for spectroscopic measurement of monitoring network samples in 3 US measurement networks (Federal Reference Method, Chemical Speciation Network, and Interagency Monitoring of Protected Visual Environments).

Joint research and publication to study aerosols in the Southern Oxidant and Aerosol Study (SOAS) campaign.

Key publications since 2011

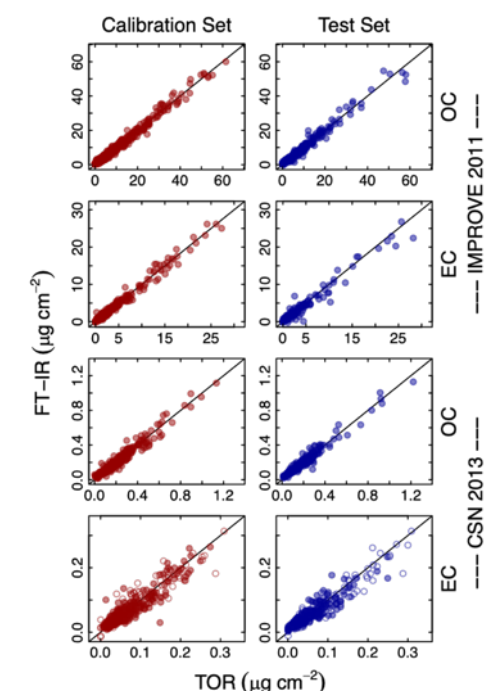
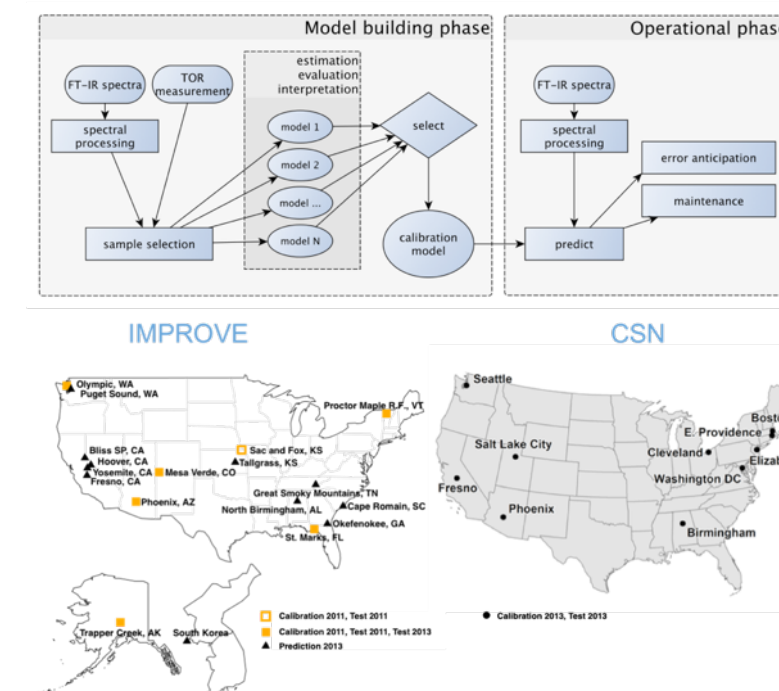
Takahama, S., Dillner, A. M., Weakley, A. T., Reggente, M., Bürki, C., Lbadaoui-Darvas, M., Debus, B., Kuzmiakova, A., and Wexler, A. S.: Atmospheric particulate matter characterization by Fourier Transform Infrared spectroscopy: a review of statistical calibration strategies for carbonaceous aerosol quantification in US measurement networks, *Atmospheric Measurement Techniques*, 12, 525-567, doi:10.5194/amt-12-525-2019, 2019.

Arangio, A., Delval, C., Ruggeri, G., Dudani, N., Yazdani, A., and Takahama, S.: Electro spray film deposition for solvent-elimination infrared spectroscopy, *Applied Spectroscopy*, in press, 2018.

Ergin, G., Lbadaoui-Darvas, M., and Takahama, S.: Molecular Structure Inhibiting Synergism in Charged Surfactant Mixtures: An Atomistic Molecular Dynamics Simulation Study, *Langmuir*, 33, 14093-14104, doi:10.1021/acs.langmuir.7b03346, 2017.

Modini, R. L. and Takahama, S.: Sampling strategies and post-processing methods for increasing the time resolution of organic aerosol measurements requiring long sample collection times, *Atmospheric Measurement Techniques*, 9, 3337-3354, doi:10.5194/amt-9-3337-2016, 2016.

Ruggeri, G., Bernhard, F. A., Henderson, B. H., and Takahama, S.: Model-measurement comparison of functional group abundance in alpha-pinene and 1,3,5-trimethylbenzene secondary organic aerosol formation, *Atmospheric Chemistry and Physics*, 16, 8729-8747, doi:10.5194/acp-16-8729-2016, 2016.



Alfred Johnny Wüest

Full Professor
Physics of Aquatic Systems Laboratory;
Margaretha Kamprad Chair (APHYS)

aphys.epfl.ch

MSc Experimental Physics (1982, University of Zürich, Switzerland)

PhD Mixing in lakes (1987, ETH Zürich, Switzerland)

Keywords

Hydrodynamic lake modelling, small-scale turbulence, boundary layer processes, double diffusion, lake management, nutrient and oxygen cycling, methane, anthropogenic impacts on waters

Career trajectory

1982-1983	Cerberus Männedorf, Smoke Detector Company
1984-1987	Research assistant, PhD student, ETH Zürich
1987-1988	Applied Physics Laboratory, UW, Seattle
1989-2016	Head of Aquatic Physics, Eawag
2000-2005	Department head of Applied Aquatic Ecology, Eawag
2002-2012	Adjunct professor, ETH Zürich
2006-2012	Department head of Surface Waters, Eawag
2012 to date	Full Professor, EPFL,
2013 to date	Director of Limnology Center, EPFL
2015 to date	Member of Eawag Directorate

Research mission & relevance

The research interests of Professor Wüest include:

Quantifying small-scale turbulence in stratified natural waters, including diapycnal diffusivity, boundary layer and convective turbulence as well as double diffusion

Interlinking driving physical regimes with biogeochemical fluxes, rates and spatial distributions of water quality constituents, such as particles, nutrients, oxygen and methane

Assessing anthropogenic impacts on physical and biogeochemical characteristics of natural waters and potential mitigation and restoration measures

Assessing the use of natural waters for heat management (heating and cooling) as well as downstream effects of hydropower production

Combining hydrodynamic modelling and remote sensing information for the interpretation and quantification of physico-biogeochemical processes

Biogeochemical cycling of methane and methane harvesting in Lake Kivu for energy production

Honors, memberships, scientific community services

Committee Doctoral Program in Civil and Environmental Engineering

Member of Eawag Directorate

Advisory Board to Swiss Competence Centre for Energy Research

Advisory Board Forschungsstelle Nachhaltige Energie, University Basel

Co-editor of Aquatic Sciences

Scientific/Technical Board for Lake Restoration on the Swiss Plateau

Group of Expert for IGKB (Lake Constance International Commission)



Bibliometric indicators

[Google Scholar Wüest](#) (February 2019)

h = 52, 8025 citations

135 peer-reviewed publications
(62 since 2011)

Several book articles

Most important grants since 2011

A Flexible Underwater Distributed
Robotic System for High-Resolution
Sensing of Aquatic Ecosystems
(Sinergia SNF)

Primary Production Under
Reoligotrophication in Lakes (regular
SNF)

Life Under Ice in Lake Ladoga
(contribution from Limnology Center /
FEEL Foundation)

Innovation, technology transfer & impact on society

Heat extraction from natural waters,
service to Authorities of Cantons with
sizable lakes

Methane extraction from Lake
Kivu, service to Gov of Ruanda and
ContourGlobal (energy company, 10 to
20 \$ billion business)

Restoration of lakes on Swiss Plateau,
service to Cantonal Authorities

Main cooperative work / collaborative projects

Primary production under reoligotrophication in lakes (Eawag, EPFL, Univ Geneva, UniL, Univ of Constance, INRA Thonon-les-Bains, SUPSI Ticino)

Oxygen depletion in stratified waters (Eawag, EPFL, Univ. of Bath, Leibniz Institute for Baltic Sea Research Warnemünde, ETH Zürich)

LéXPLORE Platform on Lake Geneva (Eawag, EPFL, Univ Geneva, UniL, INRA Thonon-les-Bains)

Key publications since 2011

Bouffard, D. and A. Wüest (2019). Convection in lakes. Annu. Rev. Fluid Mech. 51: 189 – 215. Doi: 10.1146/annurev-fluid-010518-040506.

Sommer, T., F. Danza, J. Berg, A. Sengupta, G. Constantinescu, T. Tokyay, H. Bürgmann, Y. Dressler, O.R. Sepulveda Steiner, C.J. Schubert, M. Tonolla, and A. Wüest. (2017). Bacteria-induced mixing in natural waters. Geophysical Research Letters 44 (18), 9424–9432, doi:10.1002/2017GL074868.

Kiefer, I, D. Odermatt, O. Anneville, A. Wüest, D. Bouffard (2015). Application of remote sensing for the optimization of in-situ sampling for monitoring of phytoplankton abundance in a large lake. Science of the Total Environment 527–528: 493–506. doi: 10.1016/j.scitotenv.2015.05.011

Sommer, T., J.R. Carpenter, and A. Wüest (2014). Double-diffusive interfaces in Lake Kivu reproduced by direct numerical simulations. Geophysical Research Letters 41(14): 5114–5121, doi: 10.1002/2014GL060716

Müller, B., L.D. Bryant, A. Matzinger, and A. Wüest (2012). Hypolimnetic oxygen depletion in eutrophic lakes. Environ. Sci. Technol. 46(18): 9964–9971, doi: 10.1021/es301422r.

