OLIVIER LÉVÊQUE

École Polytechnique Fédérale de Lausanne
I&C – LTHI
Building INR – Station 14
1015 Lausanne, Switzerland
+ 41 21 693 81 12
+ 41 77 442 04 93
olivier.leveque@epfl.ch
http://people.epfl.ch/olivier.leveque/

born in Geneva, October 2nd, 1971
married, two children
swiss nationality

Avenue de Jurigoz 8
1006 Lausanne, Switzerland
+ 41 21 617 60 44

Professional Experience

2015 – present	**Maître d'enseignement et recherche (MER)** with the Laboratory of Information Theory at EPFL
2001 – 2015	**Scientific collaborator** with the Laboratory of Information Theory at EPFL
2005 – 2006	**Swiss NSF post-doctoral fellow** with the Electrical Engineering Department at Stanford University; appointed as lecturer for Spring quarter 2006
1995 – 2001	**Research and teaching assistant** with the Mathematics Department at EPFL

Education

1997 – 2001	**PhD thesis** at the Mathematics Department of EPFL, entitled "Hyperbolic Stochastic Partial Differential Equations Driven by Boundary Noises" and performed under the supervision of Prof. R. C. Dalang
1990 – 1995	**Diploma degree in physics** at EPFL Diploma thesis performed during an ERASMUS exchange program at the Free University of Brussels, in the field of foundations of quantum mechanics
1985 – 1990	**Swiss maturity** at Collège Calvin, Geneva orientation: greek-latin, mention très bien

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TEACHING

2013 – present	**Preparation, organization and coordination** of the course on Information, Computation and Communication taught to first year students at EPFL
2013	**Teaching award** from the Section of Communication Systems at EPFL
2001 – present	**Courses taught at EPFL** Information, Computation and Communication (2013 – present) Markov Chains and Algorithmic Applications (2013 – present) Advanced Probability and Applications (2010 – present) Applied Probability and Stochastic Processes (2010 – 2014) Stochastic Models for Communications (2008 – 2009) Random Matrices and Communication Systems (2005 – 2012) Stochastic Calculus (2002 – 2005, 2008 – 2011)
2009 – present	**One-week courses taught abroad** Introduction to Stochastic Calculus University of Cotonou, Bénin (2009, 2010, 2013, 2016) Applied Probability and Stochastic Processes University of Maynooth, Ireland (2011)
2013 – present	**Mini-courses taught to the visiting high school students at EPFL** in the Section of Communication Systems
2001 – present	**Supervision of PhD, master and bachelor students at EPFL** in the field of communications and probability
1995 – 2001	**Teaching assistant for many courses of mathematics** taught at EPFL: Calculus, Linear Algebra, Probability, ...
Service	Member of the Interface Gymnases – EPFL (2017 – present) Member of the Council of EPFL Teachers (CCE) (2007 – 2013, 2015 – present) Member of the IC Teaching Commission (2015 – present) Member of the Social Commission of EPFL (2006 – present) Active participation to the Open Days of IC (2015) and EPFL (2016): public conference entitled "1948: The birth of the digital age"

RESEARCH

Research Interests

Information Theory
Wireless Communications
Random Matrix Theory
Stochastic Analysis

PhD Students

Serj Haddad (2013 – 2017)
Marc Desgroseilliers (2011 – 2015)
Alla Merzakreeva (2010 – 2013)
Ayfer Özgür (2005 – 2009) (EPFL best dissertation award)

Awarded Grants

March 2011	Swiss NSF project Nr. 200021 – 135451 (main applicant): "New Random Matrix Models for Wireless Communications"
August 2007	Swiss NSF project Nr. 200020 – 118076 (co-applicant): "Scalable Wireless Networks"
September 2005	Swiss NSF post-doctoral grant Nr. PA002 – 108976: "Information Theory and Communication Networks"
August 2005	Swiss NSF project Nr. 200021 – 108089 (co-applicant): "Random Matrices in Communications"

Conference Organization

As a co-chair:

- 2011 SpaSWiN Workshop
- 2008 – 2010, 2014 Joint EPFL-UMLV Workshop on Information Theory and Applications

As a TPC member:

- 2017 Didapro Conference
- 2009, 2012 – 2014, 2016 SpaSWiN Workshop
- 2013, 2015 IEEE International Symposium on Information Theory
- 2012 IEEE Information Theory Workshop
- 2010 ICC Communication Theory Workshop
- 2010 WiOpt Conference

Member of many PhD thesis committees

MAIN PUBLICATIONS

Books

A. Schiper et al., "Découvrir le numérique", Presses Polytechniques et Universitaires Romandes, 2016.

A. Özgür, O. Lévêque, D. Tse, "Operating Regimes of Large Wireless Networks", Foundations and Trends in Networking, Now Publishers, 2011.

PhD Thesis

O. Lévêque, "Hyperbolic Stochastic Partial Differential Equations Driven by Boundary Noises", PhD Thesis Nr. 2452 (2001), EPFL.

Selected Journal Papers

S. Haddad, O. Lévêque, "On the Broadcast Capacity Scaling of Large Wireless Networks at Low SNR", IEEE Transactions on Information Theory 63 (5), May 2017, 3242–3258.

R. Pedarsani, O. Lévêque, S. Yang, "On the Optimality of Time-Varying Distributed Rotation over Slow Fading Relay Channels", IEEE Transactions on Wireless Communications 14 (1), January 2015, 421–434.

A. Özgür, O. Lévêque, D. Tse, "Spatial Degrees of Freedom of Large Distributed MIMO Systems and Wireless Ad hoc Networks", IEEE Journal on Selected Areas in Communications 31 (2), February 2013, 202–214.

O. Lévêque, C. Vignat, M. Yüksel, "Diversity-Multiplexing Tradeoff for the MIMO Static Half-Duplex Relay", IEEE Transactions on Information Theory 56 (7), July 2010, 3356–3368.

A. Özgür, R. Johari, D. Tse, O. Lévêque, "Information Theoretic Operating Regimes of Large Wireless Networks", IEEE Transactions on Information Theory 56 (1), January 2010, 427–437.

A. Özgür, O. Lévêque, D. Tse, "Hierarchical Cooperation Achieves Optimal Capacity Scaling in Ad Hoc Networks", IEEE Transactions on Information Theory 53 (10), October 2007, 3549–3572.

O. Lévêque, E. Telatar, "Information Theoretic Upper Bounds on the Capacity of Large Extended Ad Hoc Wireless Networks", IEEE Transactions on Information Theory 51 (3), March 2005, 858–865.

R. C. Dalang, O. Lévêque, "Second Order Hyperbolic Equations Driven by Homogeneous Gaussian Noise on a Hyperplane", Transactions of the American Mathematical Society 358, 2006, 2123–2159.

R. C. Dalang, O. Lévêque, "Second Order Linear Hyperbolic Equations Driven by Isotropic Gaussian Noise on a Sphere", Annals of Probability 32 (1B), 2004, 1068–1099.

Other skills

Language skills	french (mother tongue), english (fluently spoken and written), german (Swiss Maturity level), italian (level Celi 4), spanish (basic knowledge)
Computer skills	C/C++, Pascal, Fortran, HTML, Maple, Mathematica, Matlab
Personal interests	chess, swimming, guitar, cello, choir singing

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References

Prof. R. C. Dalang
Ecole Polytechnique Fédérale de Lausanne
FSB – IMA – PROB
Building MA - Station 8
1015 Lausanne, Switzerland
+ 41 21 693 25 51
robert.dalang@epfl.ch

Prof. D. N. C. Tse
Stanford University
Packard Electrical Engineering Building
350 Serra Mall
Stanford, CA 94305, USA
+ 1 650 723 3473
dntse@stanford.edu

Prof. I. E. Telatar
Ecole Polytechnique Fédérale de Lausanne
I&C – LTHI
Building INR - Station 14
1015 Lausanne, Switzerland
+ 41 21 693 76 93
emre.telatar@epfl.ch

Prof. R. L. Urbanke
Ecole Polytechnique Fédérale de Lausanne
I&C – LTHC
Building INR - Station 14
1015 Lausanne, Switzerland
+ 41 21 693 76 92
ruediger.urbanke@epfl.ch
