

## Alexander Lundervold

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### Personal Data

Born: July 27, 1983 in Oslo, Norway  
Citizenship: Norwegian

### Employment

Postdoctoral researcher (Marie Curie fellow), Inria Bordeaux, France, 2013–present  
Temporary associate professor, Norwegian University of Science and Technology, 2011–2013  
Doctoral research fellow, University of Bergen, 2007–2010  
Teaching assistant, University of Bergen, 2003–2007

### Education

PhD, Numerical analysis, University of Bergen, 2011. Thesis advisors: Hans Z. Munthe-Kaas (Bergen), Kurusch Ebrahimi-Fard (ICMAT, Spain). Evaluation committee: Martin Bordemann (LMIA, France), Ander Murua (EHU, Spain). Thesis title: *Lie-Butcher series and geometric numerical integration on manifolds*

MSc., Topology, University of Bergen, 2007. Thesis advisor: Bjørn I. Dundas. Thesis title: *Higher order cyclic homology for rational algebras*

BSc. Mathematics, University of Bergen, 2005

### Papers

K. Ebrahimi-Fard, A. Lundervold and D. Manchon. *Noncommutative Bell polynomials, quasideterminants and incidence Hopf algebras*, arXiv preprint, 2014

A. Lundervold and H.Z. Munthe-Kaas. *On algebraic structures of numerical integration on vector spaces and manifolds*, to appear in IRMA Lectures in Mathematics and Theoretical Physics, 2014

H.Z. Munthe-Kaas and A. Lundervold. *On post-Lie algebras, Lie-Butcher series and moving frames*, Foundations of Computational Mathematics, Volume 13, Issue 4, 2013

A. Lundervold and H.Z. Munthe-Kaas. *Backward error analysis and the substitution law for Lie group integrators*, Foundations of Computational Mathematics, Volume 13, Issue 2, 2013

K. Ebrahimi-Fard, A. Lundervold, S.J.A. Malham, H.Z. Munthe-Kaas, A. Wiese. *Algebraic structure of stochastic expansions and universally accurate simulation*, Proceedings of the Royal Society. Mathematical, Physical and Engineering Sciences, Volume 468 (2144), 2012

A. Lundervold and H.Z. Munthe-Kaas. *Hopf algebras of formal diffeomorphisms and numerical integration on manifolds*, Contemporary Mathematics, 539, 2011

A. Lundervold, A. Lundervold, H. Nordby, A.J. Lundervold, I. Reinvang. *Application of nonlinear time series analysis to single-trial ERPs*, Human Brain Mapping Conference, June 18–22, 2003, New York City.

## Personal grants

ERCIM Alain Bensoussan Fellowship (Marie Curie Fellow), 2013  
Abel Extraordinary Chair from the NILS Mobility Project, 2009  
Abelstipend from the Norwegian Mathematical Society, 2005  
Carl Johan Støretvedts legat (awarded to talented students at the University of Bergen), 2004

## Teaching Experience

Lecturer, NTNU. TMA4125 – Matematikk 4, 2013  
Lecturer, NTNU. TMA4100 – Matematikk 1, 2012  
Lecturer, NTNU. MA0002 - Brukerkurs B, 2012  
Lecturer, NTNU. TMA4100 – Matematikk 1, 2011  
Substitute lecturer in two lectures, UoB. MAT212 – Functions of several variables, 2010  
Substitute lecturer in two lectures, Université de Strasbourg, France. Course: *Les algèbres de Hopf combinatoires en théorie quantique des champs perturbative*, 2009  
Substitute lecturer in two lectures, UoB, MAT235 – Vector and tensor analysis, 2008  
Teaching assistant, UoB. STAT101 – Elementary Statistics, 2007  
Teaching assistant, UoB. MAT121 – Linear Algebra, 2007  
Teaching assistant, UoB. MAT111 – Calculus I, 2006  
Teaching assistant, UoB. MAT121 – Linear Algebra, 2006  
Teaching assistant, UoB. MAT111 – Calculus I, 2005  
Teaching assistant, UoB. MAT213 – Functions of a Complex Variable, 2005  
Teaching assistant, UoB. MAT112 – Calculus II, 2004  
Teaching assistant, UoB. MAT111 – Calculus I, 2003

## Administrative Experience

Secretary of COCO2010, Madrid, Spain, April–June, 2010  
Member of the Department Council, UoB, 2010  
Student Member of “Programstyret”, UoB, 2006–2007  
Student Member of the Library Council, UoB, 2005–2006  
Student Member of the Department Council, UoB, 2006–2007

## Travels and Conferences

Visit to IMUVA, Universidad de Valladolid, Spain, March 13, 2014  
Visit to Kurusch Ebrahimi-Fard, ICMAT, Madrid, Spain, March 4–15, 2014  
Visit to the Research group in Free Probability, Fachrichtung Mathematik, Universität des Saarlandes, Saarbrücken, Germany, February 23–25, 2014  
Visit to Dominique Manchon, Université Blaise Pascal, Clermont-Ferrand, France, February 13–23, 2014  
Visit to Hans Munthe-Kaas, University of Bergen, January 6–31, 2014  
Visit to Dominique Manchon, Université Blaise Pascal, Clermont-Ferrand, France, October 29–December 13, 2013  
Workshop on Renormalisation from Quantum Field Theory to Random and Dynamical Systems, University of Potsdam, Germany, November 7–9, 2013

School on Multiple Zeta Values, Multiple Polylogarithms and Quantum Field Theory, ICMAT, Madrid, Spain, October 7–11, 2013

SciCADE 2013, Valladolid, Spain, September 16–20, 2013

CEMRACS 2013 Summer School, Modelling and simulation of complex systems: stochastic and deterministic approaches, CIRM, Marseille, France, July 22–26, 2013

Visit to DAMTP, Centre for Mathematical Sciences, University of Cambridge, UK, December 4–8, 2011

Visit to Université Blaise Pascal, Clermont-Ferrand, France, May 9–13, 2011

MaGIC 2011, Finse, Norway, March 1–4, 2011

International Conference on Combinatorics and Control, La Cristalera, Spain, June 20–25, 2010

European Science Foundation’s Forward Look on Mathematics and Industry, Consensus Conference, Madrid, Spain, April 26–27, 2010

School on Combinatorics and Control, Benasque, Spain, April 12–16, 2010

Workshop on Combinatorics and Control, Madrid, Spain, April 6–9, 2010

Trimester on Combinatorics and Control, Madrid, Spain, April 6–June 25, 2010 (financed by the NILS grant)

MaGIC 2010, Ustaoset, Norway, March 2–5, 2010

Visit to Universidad de Zaragoza, Zaragoza, Spain, February 15–28, 2010

Visit to Heriot-Watt University, Edinburgh, Scotland, December 6–10, 2009

SciCADE 2009, Beijing, China, May 25–29, 2009

Ecole thématique sur les opérades, CIRM, Luminy, France, April 20–24, 2009

MaGIC 2009, Lillehammer, Norway, March 3–6, 2009

Visit to Institut de Recherche Mathématique Avancée, Université de Strasbourg, France, Jan–Feb, 2009

KoMiN 2008, Bergen, Norway, November 7–9, 2008

Méthodes numériques et algèbres de Hopf d’arbres, Université Blaise Pascal, Clermont-Ferrand, France, October 23–24, 2008

Foundations of Computational Mathematics, Hong Kong, China, June 16–26, 2008

Conférence Algèbre combinatoire et Arbres, Lyon, France, May 26–30, 2008

MaGIC 2008, Renon, Bolzano, Italy, February 18–21, 2008

KoMiN 2007, Oslo, Norway, November 2–4, 2007

Nasjonalt algebramøte, Oslo, Norway, November 1–2, 2007

The Nordic Conference in Topology, Trondheim, Norway, November 24–25, 2006

KoMiN 2006, Trondheim, Norway, November 3–5, 2006

Workshop on Triangulated Categories, Leeds, UK, August 13–19, 2006

Fifth NRW Topology Meeting, Bielefeld, Germany, April 28–29, 2006

25th Anniversary of MPIM, Bonn, Germany, April 1–5, 2006

Guest of Prof. Stefan Schwede, Mathematisches Institut, Rheinischen Friedrich-Wilhelms-Universität Bonn, Germany, March 31–May 5, 2006

### **Membership in Scientific Societies**

Norwegian Mathematical Society, 2003–present

American Mathematical Society, 2004–present