

Christian Stohrer

Curriculum Vitae

POems, UMA, ENSTA ParisTech

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Personal Details

Home Address 5, Rue Bachaumont
91430 Igny, France

Date of Birth October 31, 1984

Place of Birth Basel, Switzerland

Citizenship Swiss

Education

- 2008–2013 **Doctoral studies in Mathematics**, University of Basel, Switzerland.
Ph.D. received in May 2013 (summa cum laude)
Thesis: Finite Element Heterogeneous Multiscale Methods for the Wave Equation
Advisor: Prof. Dr. Marcus J. Grote
- 2006–2008 **Master studies in Mathematics**, University of Basel, Switzerland.
Master of Science received in April 2008 (Grade: 6.0)
Thesis: One-dimensional Wave Propagation in a Composite Material
Advisor: Prof. Dr. Marcus J. Grote
- 2003–2006 **Bachelor studies in Mathematics**, University of Basel, Switzerland.
Bachelor of Science received in September 2006 (Grade: 6.0)
- 1998–2003 **Secondary education**, Gymnasium Kirschgarten, Basel, Switzerland.
Matura received in June 2003 (Grade: 5.83)

Academic and Work Experience

- since 2013 **Postdoctoral research assistant**, Laboratoire POems, Unité Mathématiques Appliquées, ENSTA ParisTech, France.
Funded by ANR Project METAMATH (Oct. 2013 – Mar. 2014) and SNF Early PostDoc.Mobility Fellowship (Apr. 2014 – Sept. 2015)
- 2008–2013 **Research and teaching assistant**, Mathematical Institute, University of Basel.
- 2006–2008 **Teaching assistant**, Mathematical Institute, University of Basel.

Fellowship

- 2014–2015 **Early Postdoc.Mobility fellowship**, Granted by the Swiss National Science Foundation for 18 months.

Languages and Computer Skills

German	Mother tongue	Operating System	UNIX/Linux, Windows 7
English	Advanced knowledge	Software	L ^A T _E X, MATLAB, Maple
French	Advanced knowledge	Programming	MATLAB basic knowledge in C, R

Presentations

Invited Talks

- May 2015 *Analytical and Numerical Homogenization of Maxwell's Equations*, University of Basel, Department of Mathematics and Computer Science (Seminar in Numerical Analysis); Basel, Switzerland.
- Dec. 2014 *Finite Element Heterogeneous Multiscale Method: A Detailed Introduction*, ENSTA ParisTech, UMA, POems (Réunion METAMATH); Palaiseau, France.
- Dec. 2014 *Numerical homogenization for wave propagation in highly oscillatory media*, KIT, Department of Mathematics (GRK Seminar); Karlsruhe, Germany).
- Mar. 2014 *A (not so) short overview of FE Heterogeneous Multiscale Methods with Focus on Homogenization Problems*, ENSTA ParisTech, UMA, POems (Groupe de Travail Doctorants et Post-doctorants POems); Palaiseau, France.
- Apr. 2013 *Finite Element Heterogeneous Multiscale Method for the Wave Equation*, ENSTA Paris-Tech, UMA, POems; Palaiseau, France.
- Apr. 2013 *Effective multiscale FEM for long-time wave propagation in heterogeneous media*, ETHZ, D-ERDW, Seismology and Geodynamics; Zurich, Switzerland.
- May 2012 *Finite Element Heterogeneous Multiscale Method for the Wave Equation*, ETHZ, D-MATH, SAM; Zurich, Switzerland.

Conference Contributions

- Apr. 2014 *Finite Element Heterogeneous Multiscale Method for the Helmholtz Equation in Complex Media*, Swiss Numerics Colloquium 2014, University of Zurich, Zurich, Switzerland.
- Sept. 2013 *Micro-Scales and Long-Time Effects: FE Heterogeneous Multiscale Method for the Wave Equation*, ENUMATH 2013, EPFL, Lausanne, Switzerland.
- June 2013 *Finite Element Heterogeneous Multiscale Method for the Wave Equation: Long-Time Effects*, Waves 2013, Gammarth, Tunisia.
- Apr. 2013 *Effective multiscale FEM for long-time wave propagation in heterogeneous media*, Swiss Numerical Colloquium, 2013, EPFL, Lausanne, Switzerland.
- Apr. 2012 Poster contribution, Swiss Numerics Colloquium 2012, University of Bern, Bern, Switzerland.
- May 2011 Poster contribution, Swiss Numerics Colloquium 2011, USI, Lugano, Switzerland.
- Aug. 2011 *Finite Element Heterogeneous Multiscale Method (FE-HMM) for the wave equation*, Pro*Doc Retreat 2010, Disentis, Switzerland.
- Apr. 2010 Poster contribution, Swiss Numerics Colloquium 2010, ETHZ, Zurich, Switzerland.
- Apr. 2009 Poster contribution, Swiss Numerics Colloquium 2009, University of Basel, Basel, Switzerland.

Workshops, Schools and Courses

- June 2014 **Summer School**, *Computational Electromagnetism*, Cetraro (CS), Italy.
Lecturers: H. Haddar, R. Hiptmair, P. Monk, R. Rodriguez
- Nov. 2012 **Mini-Course**, *Bayesian Inverse Problems and Data Assimilation in PDEs*, ETHZ, Zurich, Switzerland.
Lecturer: Andrew Stuart
- Apr. 2012 **Doctoral School**, *Game Theory, Evolutionary Game Theory and Learning in Games*, Les Diablerets, Switzerland.
Lecturers: Josef Hofbauer, Sylvain Sorin, Mathieu Faure
- Dec. 2011 **Workshop**, *Numerical Analysis of Multiscale Problems & Stochastic Modelling*, RICAM, Linz, Austria.
part of the Radon Special Semester 2011
- May 2011 **Mini-Course**, *PDE-Constrained Optimization*, University of Basel, Basel, Switzerland.
Lecturer: Prof. E. Haber
- Feb. 2010 **Mini-Course**, *Numerical Integration of Stochastic Differential Equations*, University of Basel, Basel, Switzerland.
Lecturer: Prof. D. Higham
- July 2009 **Summer School**, *Multiscale and Adaptivity: Modeling, Numerics and Applications*, Cetraro (CS), Italy.
Lecturers: S. Bertoluzza, B. Engquist, R. H. Nochetto, A. Veiser, A. Quateroni, K. G. Siebert

Publications

Journal articles

D. Arjmand and C. Stohrer. A finite element heterogeneous multiscale method with improved control over the modeling error. *Commun. Math. Sci.*, 2015. Accepted for publication.

P. Ciarlet, Jr. and C. Stohrer. Finite element heterogeneous multiscale method for the classical helmholtz equation. *C. R. Acad. Sci.*, 352:755–760, 2014.

A. Abdulle, M. J. Grote, and C. Stohrer. Finite element heterogeneous multiscale method for the wave equation: Long time effects. *Multiscale Model. Simul.*, 12(3):1230–1257, 2014.

A. Abdulle, M. J. Grote, and C. Stohrer. FE heterogeneous multiscale method for long-time wave propagation. *Comptes rendus de l'Académie des Sciences*, Ser I.(351):495–499, 2013.

Conference proceedings

P. Ciarlet, Jr., S. Fliss, and C. Stohrer. Finite element heterogeneous multiscale method for maxwell's equations in frequency domain. *Submitted*, 2015.

A. Abdulle, M. J. Grote, and C. Stohrer. Finite element heterogeneous multiscale method for the wave equation: Long-time effects. In *Proceedings of the 11th International Conference on the Mathematical and Numerical Aspects of Waves*, pages 233–234, 2013.

M. J. Grote, A. Abdulle, and C. Stohrer. Finite element heterogeneous multiscale method for the wave equation: Long time effects. In *Computational Electromagnetism and Acoustics*, volume 10 of *Oberwolfach Reports*, pages 185–189, 2013.

A. Abdulle, M. J. Grote, and C. Stohrer. Finite element heterogeneous multiscale method for transient wave propagation. In *Proceedings of the 10th International Conference on the Mathematical and Numerical Aspects of Waves*, pages 45–48, 2011.

Theses

C. Stohrer. *Finite Element Heterogeneous Multiscale Methods for the Wave Equation*. PhD thesis, University of Basel, 2013.

C. Stohrer. One-dimensional wave propagation in a composite material. Master thesis, University of Basel, 2008.

Teaching Activities

- FS 2013 **Exercises**, *Einführung in die Numerik*, Prof. H. Harbrecht.
- HS 2012 **Project**, *Numerik der Partiellen Differentialgleichungen I*, Prof. M. J. Grote.
- FS 2012 **Practical Course**, *Mathematik am Computer II*, Prof. M. J. Grote.
- HS 2011 **Exercises**, *Theory of Partial Differential Equations*, Prof. G. Crippa.
- FS 2011 **Project**, *Einführung in die Numerik*, Prof. D. Cohen.
- HS 2010 **Exercises und Project**, *Numerik der Differentialgleichungen*, Dr. J. Schweitzer.
- HS 2010 **Mathematical Introductory Course**.
- FS 2010 **Exercises**, *Infinitesimalrechnung II*, Prof. H.-Ch. Im Hof.
- HS 2009 **Exercises**, *Infinitesimalrechnung I*, Prof. H.-Ch. Im Hof.
- HS 2009 **Mathematical Introductory Course**.
- FS 2009 **Practical Course**, *Mathematik am Computer II*, Prof. M. J. Grote.
- HS 2008 **Practical Course**, *Mathematik am Computer I*, Prof. M. J. Grote.
- HS 2008 **Mathematical Introductory Course**.
- FS 2008 **Exercises**, *Mathematik II für Studierende der Naturwissenschaften*, Dr. H. Walser.
- WS 06/07 **Exercises**, *Einführung in die Statistik*, Dr. C. Luchsinger.
- SS 2006 **Exercises**, *Lineare Algebra II*, Prof. H. Kraft.
- WS 05/06 **Exercises**, *Lineare Algebra I*, Prof. H. Kraft.