Dr. Alfonso Caiazzo

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Work Experiences

May 2010 – current Research fellow at WIAS Berlin, Numerical Mathematics and Scientific Computing group (head: Prof. Dr. V. John)
- Computational hemodynamics
- Modeling of poroelastic tissues
- Coupling of free flows and porous media flows
- Reduced-order modeling for incompressible fluid simulations
- Software development (FEM)

May 12 - Feb 13 Research stay at Department of Civil and Environmental Engineering, University of Trento, Italy (head: Prof. E.F. Toro)
- Modeling of venous hemodynamics

Dec 08 – Apr 10 Postdoc INRIA Paris-Rocquencourt, France, team REO (head: Dr. J-F. Gerbeau)
- Model order reduction for patient-specific blood flow simulations
- Fluid-Structure interaction in cardiovascular system

Aug 07 – Nov 08 Postdoc at University of Amsterdam, Informatics Institute, section of Computational Science (head: Prof. P.M.A. Sloot)
- Multiscale methods for complex biomedical systems
- Developers team supervisor (EU-project COAST)

Mar 06 – Jul 07 Research fellow at Fraunhofer ITWM, Kaiserslautern, department of Flows and Complex Structures (head: Dr. K. Steiner)
- Commercial software development (LBM-based)
- *Lattice Boltzmann methods for Fluid-Structure interaction problems*

Education

Nov 2015	Habilitation thesis submitted (FU Berlin, Department of Mathematics)
Jan 03 – Dec 06	Doctoral studies in Techno- and Industrial Mathematics Scuola Normale Superiore, Pisa (Italy) and TU Kaiserslautern (Germany) Thesis (Feb 2007): *Asymptotic Analysis of lattice Boltzmann method for fluid-structure interaction problems* Mark: *70/70 cum laude* (highest in Italy)
Oct 98 – Oct 02	**Laurea (Master degree) in Applied Mathematics**, University of Pisa *Resonances in 3-bodies problems with collisions: the Average method.* Mark: *110/110 cum laude* (highest in Italy)

Grants & Scolarships

Jun 12 – May 13	DFG Grant for "Initiation of bilateral cooperation" (5000 €)
Dec 08 – Dec 09	winner of ERCIM Fellowship program "Alain Bensoussan"

Summary of publications

- 24 papers in international journals
- 7 conference proceedings
- 3 book chapters

Invited talks, contributions in international conferences and seminars (2011–2015)

Jul 15	Conference on Computational and Mathematical Biomedical Engineering, Paris, France
Jun 15	Conference on Differential Equations and Applications (CEDYA), Cadiz, Spain (invited)
Jun 15	Besan con Week on Numerical Analysis (invited)
Dec 14	Universidad de Castilla La Mancha, Ciudad Real, Spain (invited)
Jul 14	Laboratoire de Mathmatiques de Besançon, Universit de Franche-Comté, France (invited)
May 14	Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Paris, France (invited)
Sep 13	SciCADE (Scientific Computing and Differential Equations), Valladolid, Spain
Aug 13	ENUMATH (European Numerical Mathematics), Lausanne, Switzerland
Apr 13	Seminar, Magnetic Resonance Elastorgraphy group, Charité, Berlin, Germany
Apr 12	CMBBE (Computer Methods in Biomechanics and Biomedical Engnr.), Berlin, Germany
Nov 11	Wroclaw institute of technology, Wroclaw, Poland (invited)
Oct 11	Politecnico di Milano (MOX), Milano, Italy (invited)
Oct 11	Workshop on Modeling of Venous hemodynamics, Trento, Italy
Sep 11	Workshop on Fluid Dynamics in Porous Media, Coimbra, Portugal
Mar 11	FEF (Finite Element in Flow Problems), Munich, Germany

Teaching experiences

Winter Semester 2014-15: Analysis 2 für Physiker, FU Berlin.
Summer Semester 2014: Mathematik für Geowissenschaftler, FU Berlin.
Summer Semester 2014 : Assistence in *Mathematik 2 für Berufliche Fachrichtungen*, TU Berlin
Winter Semester 2013-14: Assistence in Analysis 1 (*Lehramtbezogen*), FU Berlin.
Summer Semester 2012: Linear Algebra 1 (*Lehramtbezogen*), FU Berlin.

Scientific Computing Skills

Programming Languages:

- C++ : good knowledge and experience (development of a production code)
- FreeFem++: good knowledge and experience
- R, MATLAB: good knowledge of programming tools
- FORTRAN 77/90/95: good knowledge and experience
- JAVA: basic experience

Pre- and Post-processing Software:

- gmsh, 3-MATIC, medit, Tetgen (grid generation and processing)
- Ensight, Paraview (visualization)
- Mimics, CardioVIZ, Osirix (segmentation and analysis of medical images)

Languages Skills

- Italian: mother language
- English: fluent
- Spanish: fluent
- German: good
- French: good

Berlin, February 23, 2016