

Curriculum Vitae

Alexander Mielke



Date of birth: 14 September 1958
Nationality German
Family status: Married since 1982, two daughters and one son
Current position: Head of Research Group *Partial Differential Equations*
at Weierstraß-Institut für Angewandte Analysis und Stochastik
Full Professor at Humboldt-Universität zu Berlin

*A careful study of Nature is the most fruitful source of
mathematical discoveries. J. B. J. Fourier (1768-1830)*

Short scientific vita

1983 Diploma, Universität Stuttgart
1984 PhD, Universität Stuttgart (advisor K. Kirchgässner)
1984–1992 Research fellow, Universität Stuttgart
1986–1987 Postdoctoral Research Associate, Cornell University
1990 Habilitation, Universität Stuttgart
1992–1999 Full Professor at Universität Hannover
1999–2004 Full Professor at Universität Stuttgart
since 2005 Full Professor at Humboldt-Universität zu Berlin,
Vice Director of Weierstraß-Institut für Angewandte Analysis und Stochastik,
and Head of Research Group *Partial Differential Equations*

Main research areas

- Bifurcation theory and center-manifold reductions (1984-1995)
- Navier-Stokes and water waves (1990–2003)
- Dissipative dynamics on extended domains (1990–2005)
- Material modeling: shape-memory effect, damage and plasticity (since 1995)
- Multiscale modeling (since 2000)
- Optoelectronics, lattice dynamics, and quantum mechanics (since 2005)
- Photovoltaics (since 2009)

Work on editorials boards of international journals

- Mathematische Nachrichten, Associate Editor, since 1992.
- Journal of Nonlinear Science, Associate Editor, since 1994.
- Zeits. Angewandte Math. Physik, Associate Editor, since 1995. Editor, since 2010.
- Archive for Rational Mechanics and Analysis, Co-Editor since 1996.
- Zeits. Angewandte Math. Mechanik, since 1998; Editor-in-Chief, 2000–09.
- ESAIM Control, Optimization, Calculus of Variations, Associate Editor, since 2006.
- Mathematical Models & Methods in Applied Sciences, Associate Editor, since 2007.

Major involvements in scientific administration

- since 2008 Executive Board of the DFG Research Center MATHEON
- 2007 Program Committee of EQUADIFF 2007 (Wien)
- 2007 Program Committee of ICIAM 2007 (Zürich)
- since 2005 Vice Director of WIAS Berlin (with 140 employees)
- since 2004 Member of the Executive Board of ISIMM
- 2000–2008 Spreader of the DFG Priority Program SPP 1095: *Analysis, Modeling and Simulation of Multiscale Problems*
- 2002–2004 Speaker of Collab. Research Center SFB 404: *Multifield Problems*
- 1999–2004 Executive Board of the GAMM
- 1998–2010 Prize Committee for *Richard von Mises Prize*

Distinctions

- *Richard-von-Mises-Preis 1989* awarded by GAMM
- *Heinz-Maier-Leibnitz-Preis 1989 for Applied Mathematics* awarded by Bundesministerium für Bildung und Wissenschaft,
- LMS Lecturer at Bath University 1999 (awarded by London Mathematical Society)
- Invited Sectional lecturer at ICM 2002, Beijing
- Plenary speaker at ICIAM 2003, Sydney
- Lipschitz Lectures 2007, Hausdorff Center, Universität Bonn
- Plenary speaker at IUTAM Symposium 2008, Cape Town
- Plenary speaker at SIAM Conf. on Mathematical Aspects of Materials Science, 2010
- ERC Advanced Grant *Analysis of Multiscale Systems Driven by Functionals*, FP7 no. 267802, 2011–2016

Five selected publications

- C. Carstensen, K. Hackl, and AM. Non-convex potentials and microstructures in finite-strain plasticity. *Proc. Royal Soc. London, Ser. A*, 458:299–317, 2002.
- AM. Evolution in rate-independent systems (Ch. 6). In “C. Dafermos and E. Feireisl (eds), *Handbook of Differential Equations, Evolutionary Equations, vol. 2* Elsevier B.V., 2005”, pages 461–559.
- AM. Macroscopic behavior of microscopic oscillations in harmonic lattices via Wigner–Husimi transforms. *Arch. Rational Mech. Anal.*, 181:401–448, 2006.
- AM, T. Roubíček, and U. Stefanelli. Γ -limits and relaxations for rate-independent evolutionary problems. *Calc. Var. Part. Diff. Equ.*, 31:387–416, 2008.
- A. Mainik and AM. Global existence for rate-independent gradient plasticity at finite strain. *J. Nonlinear Sci.*, 19:221–248, 2009.

IMU activities

Head of IMU Secretariat

- interface between the Weierstraß-Institute and the IMU
- responsibility for the employees in the IMU Secretariat

Treasurer of IMU

- control and help to optimize the different funds of the IMU
- assist in applying for additional funding