

CURRICULUM VITAE

PERSONAL DATA

Name: Andreas Fichtner
Date of birth: 7 June 1979
Place of birth: Rochlitz, Germany
Nationality: German

EDUCATION

1999-2002: University of Mining and Technology, Freiberg, Germany; Bachelor in Geophysics (excellent with distinction)
2002-2003: Fulbright student at the University of Washington, Seattle, USA
2003-2005: Ludwig Maximilian University, Munich, Germany; MSc in Geophysics (excellent with distinction)
2005-2009: Ludwig Maximilian University, Munich, Germany; PhD (excellent with distinction)

INSTITUTIONAL APPOINTMENTS

10/2009-12/2012: Postdoctoral researcher, Utrecht University, Utrecht, The Netherlands
1/2013-12/2017: Assistant professor, ETH Zurich
since 1/2018: Associate professor, ETH Zurich

PROFESSIONAL SOCIETIES

American Geophysical Union (AGU)
Deutsche Geophysikalische Gesellschaft (DGG)

HONORS AND AWARDS

2002-2003: **Fulbright Scholarship**
2004: Scholarship awarded by the French-German Youth Office
2007: Scholarship awarded by the German Academic Exchange Service
2008: **Geophysical Journal International Student Paper Award**
2008: **Invited talk at the 58th Meeting of Nobel Laureates in Physics**
2009: Student paper award, American Geophysical Union
2010: Best oral presentation award by the German Geophysical Society
2011: **Keiiti Aki young scientist award by the American Geophysical Union**
2013: **The Golden Owl, ETH teaching award for *Inverse Theory* class (best teaching in Earth Sciences)**
2010-2015: Outstanding reviewer award by the Geophysical Journal International
2015: **Early Career Scientist Award by the International Union of Geodesy and Geophysics (IUGG)**
2016: **Blaustein Visiting Professorship, Stanford University**
2016: **ERC Starting Grant**
2017: **Elected member of the Young Academy of Europe**
2017: Outstanding reviewer award by the Geophysical Journal International
2018: **Hoffmann Prize, Bavarian Academy of Sciences, inaugural recipient**

ACADEMIC COMMITMENTS

Teaching

- 2018-2016-2017 • *Integrated Earth systems* (graduate level, ETH Zurich)
- 2015 • *Seismology of the spherical Earth* (graduate level, ETH Zurich)
- 2015 • *Seismic imaging using earthquake and ambient noise data* (graduate level, Stanford University)
- 2015 • *Great papers in seismology* (graduate level, ETH Zurich)
- 2013-2013 • *Inverse theory* (graduate level, ETH Zurich)
- 2013 • *Topics in theoretical seismology* (MSc/PhD level, ETH Zurich)
- 2008: • *Global geophysics* (seismology & geodynamics, graduate level, LMU Munich, Germany)
- 2000: • *Computer science* (C programming, undergraduate level, Univ. of Mining and Technology, Freiberg, Germany)

Mentoring of postdocs

- D. Bowden:** Wiener filtering of seismic array data
- M. Koroni:** waveform inversion for topography on Earth's internal discontinuities
- V. Hapla:** GPU-accelerated seismic wave propagation, ETH Zurich
- M. Bocher:** geodynamic sequential data assimilation, ETH Zurich
- L. Krischer:** deep learning in seismology, ETH Zurich
- Y. van Dinther:** data assimilation for earthquake physics, ETH Zurich
- L. Cobden:** mineral physics interpretation of seismic tomography, Utrecht University
- P. Koelemeijer:** seismic interferometry, normal-mode seismology, ETH Zurich
- C. Böhm:** numerical optimisation, seismic modelling and inversion, ETH Zurich
- M. Rietmann:** numerical wave propagation, ETH Zurich

Supervision of PhD students

- M. Bernauer:** PhD thesis (completed) on rotational seismology, Ludwig Maximilian University, Munich
- L. Colli:** PhD thesis (completed) on waveform tomography and geodynamics, Ludwig Maximilian University, Munich
- F. Rickers:** PhD thesis (completed) on misfit functional design and tomography, Utrecht University
- D. de Vos:** PhD thesis (completed) on the finite-frequency two-station method, Utrecht University
- L. Ermert:** PhD thesis (completed) on full waveform ambient noise tomography, ETH Zurich
- M. Afanasiev:** PhD thesis (completed) on global multiscale full waveform inversion, ETH Zurich
- S. Simute:** PhD thesis (in progress) on finite earthquake source inversion, ETH Zurich
- K. Sager:** PhD thesis (in progress) on full waveform noise tomography, ETH Zurich
- N. Blom:** PhD thesis (completed) on seismic density tomography, Utrecht University
- A. Plonka:** PhD thesis (in progress) on seismic density tomography, Utrecht University
- I. van Zelst:** PhD thesis (in progress) on combining tsunami and earthquake simulations, ETH Zurich
- N. Korta:** PhD thesis (in progress) on translating seismic to medical imaging, ETH Zurich
- D. P. van Herwaarden:** PhD thesis (in progress) on the Collaborative Seismic Earth Model, ETH Zurich
- P. Paitz:** PhD thesis (in progress) on Distributed Acoustic Sensing, ETH Zurich
- S. Thrastarson:** PhD thesis (in progress) on combining traveltimes and full waveform tomography, ETH Zurich
- L. Gebraad:** PhD thesis (in progress) on Hamiltonian Monte Carlo full waveform inversion, ETH Zurich

Supervision of MSc students

- M. Bernauer:** MSc thesis (completed) on rotational seismology, Ludwig Maximilian University, Munich
- P. Käufel:** MSc thesis (completed) on probabilistic tomography, Ludwig Maximilian University, Munich
- H. Schiessl:** MSc thesis (completed) on waveform tomography, Ludwig Maximilian University, Munich
- H. Diaz-Steptoe:** MSc thesis (completed) on waveform tomography for the Japan region, Utrecht University
- S. Zukauskaitė:** MSc thesis (completed) on waveform tomography for the Japanese islands region, ETH Zurich
- K. Sager:** MSc thesis (completed) on combining ray tomography and full waveform inversion, ETH Zurich
- A. Lechmann:** MSc thesis (completed) on seismic source encoding, ETH Zurich
- M. Staring:** MSc thesis (completed) on waveform tomography of the East African Rift System, ETH Zurich
- E. Delaney:** MSc thesis (completed) on ambient noise source imaging, ETH Zurich
- P. Paitz:** MSc thesis (completed) on artificial neural networks for the classification of noise correlations, ETH Zurich
- D. P. van Herwaarden:** MSc thesis (completed) on full-waveform inversion of the African continent, ETH Zurich
- N. Vinard:** MSc thesis (completed) on ultrasound full-waveform inversion for breast cancer detection, ETH Zurich
- X. Lu:** MSc thesis (completed) on double-difference waveform inversion, ETH Zurich
- S. Thrastarson:** MSc thesis (completed) on wavefield modelling in ice-covered regions, ETH Zurich
- D. Soergel:** MSc thesis (completed) on fast resolution analysis by random probing, ETH Zurich

S. Morris: MSc thesis (completed) on tsunami modelling, ETH Zurich

C. Bösch: MSc thesis (in progress) on discrete wave equation upscaling in 2D, ETH Zurich

L. Gebraad: MSc thesis (in progress) on Hamiltonian Monte Carlo Full-Waveform Inversion, ETH Zurich

SERVICE TO THE ACADEMIC COMMUNITY

Organisation of workshops and symposia

- session organiser, *Computational Seismology*, EGU, Vienna, Austria, 2019
- session organiser, *Frontiers in theoretical and computational seismology*, AGU, New Orleans, USA, 2018
- workshop organiser, *Image reconstruction from millimeters to the Globe: Bridging the gap between medical and seismic imaging*, Lorentz Center, Leiden, The Netherlands, 2018
- session organiser, *Computational Seismology*, EGU, Vienna, Austria, 2018
- workshop organiser, *annual workshop of the European TIDES project*, Oxford, UK, 2017
- session organiser, *Frontiers in theoretical and computational seismology*, AGU, New Orleans, USA, 2017
- workshop organiser, *Lorentz Center workshop on Data Assimilation in Earth Sciences*, Leiden, The Netherlands, 2017
- workshop organiser, *annual workshop of the European TIDES project*, Sesimbra, Portugal, 2016
- session organiser, *Seismic imaging: From data to processes*, AGU, San Francisco, USA, 2016
- session organiser, *New developments in passive and active tomography*, Conf. Math. Geophysics, Paris, France, 2016
- session organiser, *Seismic modeling & inversion: Theory and methodological developments*, AGU, San Francisco, USA, 2015
- session organiser, *Seismic Imaging*, EGU meeting, Vienna, Austria, 2015
- session organiser, *From data to processes*, AGU, San Francisco, USA, 2014
- session organiser, *Advances in seismic imaging and inversion*, AGU, San Francisco, USA, 2013
- session organiser, *Tomography Across the Scales*, AGU, San Francisco, USA, 2012
- workshop organiser, *Uncertainty Analysis in Geophysical Inverse Problems*, Leiden, The Netherlands, 2011
- session organiser, *Advances in Seismic Tomography*, AGU, San Francisco, USA, 2010

Oversight/selection committees

- member of the *Keiiti Aki Award* Committee, American Geophysical Union, 2016/17

Reviewer responsibilities

- reviewer for the United States *National Science Foundation* and the *European Research Commission*, as well as for various international journals, including *Nature*, *Science*, the *Geophysical Journal International*, the *Astrophysical Journal*, the *Journal of Geophysical Research*, *Computational Geosciences*, *Geophysics*, *G³*, and *Pure and Applied Geophysics*.

Editorial responsibilities

- Associate editor, *Journal of Geophysical Research*, 2018-
- Associate editor, *Springer* books, 2013-2015
- Associate editor, *Geophysics* special issue on wave equation based imaging and inversion, 2014
- Associate editor, *Geophysics* special issue on convergence in geophysical methods