



Thomas Bohlen

Geophysical Institute
Karlsruhe Institute of Technology (KIT),
Germany
+49 (0)721 608 44416
thomas.bohlen@kit.edu
<http://www.gpi.kit.edu/>

OVERVIEW

Professor of Applied Geophysics
Near Surface Geophysical Imaging, Finite-Difference Seismic Modelling, Full Waveform Inversion

APPOINTMENTS

Professor of Applied Geophysics (W3) since 2009
Karlsruhe Institute of Technology

- Research on Finite-Difference Seismic Modelling, Full Waveform Inversion, Near Surface Geophysical Imaging
- Teaching courses on Introduction into Geophysics, Reflection Seismic Imaging, Theory of Seismic Waves, Inverse Theory and Tomography, Full Waveform Inversion, Seismic Wave Modelling

Professor of Exploration Geophysics (W2) 2006-2009
TU Bergakademie Freiberg

- Research on Seismic Imaging ahead of Tunnels and Boreholes, Full Waveform Inversion, Finite-Difference Seismic Modelling
- Teaching courses on Introduction into Applied Geophysics, Reflection Seismic Imaging, Time Series Analysis, Theory of Seismic Waves

Assistant Professor (C1/C2 (equivalent to W1)) 1998-2006
Kiel University

- Research on Acquisition and Inversion of Shallow Marine Surface Waves, Finite-Difference Seismic Modelling, Seismic Wave Scattering, Seismic Anisotropy
- Teaching courses on Seismic Imaging (exercises), Seismic Wave Amplitudes and Traveltimes, Time Series Analysis, Theory of Seismic Waves, Parallel Programming with MPI, Reservoir Geophysics

Reserach Assistant (Ph.D student) 1995-1998
Kiel University

- Research on Finite-Difference Seismic Modelling, Shallow Seismic Imaging, 3-D Ray-Tracing in Anisotropic Media, Seismic Anisotropy of the Lower Continental Crust, AVO Trends of Bottom-Simulating-Reflectors (BSRs)

EDUCATION

- Habilitation** 1998-2004
Kiel University
[Analysis of Seismic Waves in the Presence of Small-Scale Strong Material Discontinuities](#)
Thesis advisor: Prof. Dr. B. Milkereit (U Toronto)
- PhD Geophysics** 1995-1998
Kiel University
[Viskoelastische FD-Modellierung seismischer Wellen zur Interpretation gemessener Seismogramme](#)
Thesis advisor: Prof. Dr. W. Rabbel (U Kiel)
- Diploma Geophysics** 1989-1994
Kiel University
Very Good. Academic/Research advisor: Prof. Dr. W. Rabbel
- Civilian Service at the Rescue Service** 1987-1989
Aurich
- Abitur** 1974-1987
Gymnasium Ulricianum Aurich

MEMBERSHIPS

- [Deutsche Geophysikalische Gesellschaft \(DGG\)](#)
- [European Association of Geoscientists & Engineers \(EAGE\)](#)
- [Society of Exploration Geophysicists \(SEG\)](#)

EXTERNAL BOARDS AND COMMITTEES

- Elected Member of the [Review Board Geophysics and Geodesy](#) of the German Research Foundation [DFG](#), **2016-2019**
- Member of the German Research Council for [Physics of the Earth FKPE](#), **since 2009**
- Member of Professorship Search Committees: Geophysical Imaging (W1, U Hamburg, **2018**), Applied Mathematics (W3, KIT, **2017**), Geodetic Earth System Science (W3, KIT, **2017**), Time-dependent Partial Differential Equations (W1, KIT, **2016**), Seismology (W3, KIT, **2016**), Structural Geology (W3, KIT, **2014**), Geophysical Remote Sensing (W3, KIT, **2013**)
- Member of the Executive Board of the [Deutsche Geophysikalische Gesellschaft \(DGG\)](#) **2007-2015, 2019-2025**

FUNCTIONS IN THE ACADEMIC SELF-ADMINISTRATION

- Dean of Education in Geophysics at the [KIT-Faculty of Physics](#), **2009-2017**
- Member of the Examination Committee at the [KIT-Faculty of Physics](#), **since 2009**
- Member of the Council of the [KIT-Faculty of Physics](#), **2009-2011, 2013-2017**
- Managing Director of the [Geophysical Institute](#) at KIT, **2013-2015, 2017**
- Member of [Division V - Physics and Mathematics](#) at KIT, **2013-2019**

JOURNAL REVIEWER

- Geophysics, Geophysical Journal International, Computer & Geosciences, Geophysical Prospecting, Journal of Applied Geophysics, Pure and Applied Geophysics, and others

FUNDED RESEARCH PROJECTS

23. *PI*, "[Seismic Imaging by Full Waveform Inversion](#)", [CRC 1173 Wave Phenomena](#), Deutsche Forschungsgemeinschaft (DFG), 1 PhD, 80T €/year, **2015-2019**
22. *PI*, "[Characterization of Gas Hydrate Deposits in the Black Sea with Full Waveform Inversion](#)", [SUGAR Project](#) - Federal Ministry of Economic Affairs and Energy (BMWi), 1 PhD, 80T €/year, **2014-2018**
21. *Coordinator and PI*, "[HPC Toolbox for Wave Simulation and Inversion](#)", Federal Ministry of Education and Research (BMBF), 2 PhDs, 140T €/year, **2016-2019**
20. *PI*, "[Seismic Observations for the Underground Development \(SOUND\)](#)", [Programm Geotechnologien](#) - Federal Ministry of Education and Research (BMBF), 1 PhD, 70T €/year, **2011-2014**
19. *Coordinator and PI*, "[Toolbox for Applied Seismic Tomography \(TOAST\)](#)", [Programm Geotechnologien](#) - Federal Ministry of Education and Research (BMBF), 2 PhDs, 140T €/year, **2011-2014**
18. *PI*, "Full Waveform Inversion", [Wave Inversion Technology \(WIT\) Consortium](#), 50T €/year, **since 2009**
17. *PI*, "Seismological monitoring of earthquakes in Saxony", Landesamt für Geologie und Umwelt, Dresden, 1 PostDocs, 60T €/year, **2006-2008**
16. *PI*, "Time-domain full waveform inversion of marine reflection seismic data", Verbundnetz Gas AG, Leipzig, 2 PostDocs, 140T €/year, **2007-2010**
15. *PI*, "Active seismic imaging ahead of boreholes while drilling", Baker Hughes INTEQ, Celle, 1 PhD, 60T €/year, **2006-2010**
14. *PI*, "Optimization of 3-D Finite-Difference simulation techniques for large-scale marine seismic exploration", WesternGeco, Houston, 1 PhD, 60T €/year, **2006-2007**

13. *PI*, "Seismic imaging ahead of tunnel constructions with Rayleigh-beams", Federal Ministry of Education and Research (BMBF), 1 Ph.D, 70T €/year, **2006-2009**
12. *Co-PI*, "Seismic site exploration of the surroundings of the future offshore platform FINO II", Bundesministerium für Umwelt, Naturschutz and Reaktorsicherheit (BMU), 1 Ph.D, 60T €/year, **2005-2008**
11. *Co-PI*, "Depth variation of seismic anisotropy in the continental crust and upper mantle in the region of the German Regional Seismic Network (GRSN)", Deutsche Forschungsgemeinschaft (DFG), 1 Ph.D, 60T €/year, **2004-2007**
10. *PI*, "3D seismic imaging and inversion of elastic properties of shallow marine sediments", Deutsche Forschungsgemeinschaft (DFG), 1 Ph.D, 60T €/year, **2005-2008**
9. *PI*, "Detection and characterization of ship (noise) using low-frequency interface waves", Bundesmarine Kiel (WTD 71), 1 Ph.D, 40T €/year, **2003-2006**
8. *PI*, "Implementation of processing techniques for tunnel seismic reflection data", GeoForschungsZentrum Potsdam (GFZ), 1 PostDoc, 60T €/year, **2005**
7. *PI*, "Scholte wave tomography for shallow water marine sediments", Deutsche Forschungsgemeinschaft (DFG), 1 Ph.D, 60T €/year, **2001-2004**
6. *PI*, "Seismic profiling of S-wave velocity of shallow marine sediments from the analysis of surface waves", Deutsche Forschungsgemeinschaft (DFG), 1 Ph.D, 60T €/year, **2000-2003**
5. *PI*, "Development and implementation of new 3-C reflection seismic imaging strategies for tunnel seismic exploration", GeoForschungsZentrum Potsdam (GFZ), 1 PostDoc, 60T €/year, **2002-2004**
4. *PI*, "Finite-Difference simulation of seismic waves in a dike", GeoForschungsZentrum Potsdam (GFZ), 17T €/year, **2003-2004**
3. *PI*, "3-D Finite-Difference modelling of seismic waves around a tunnel and interpretation of real data", GeoForschungsZentrum Potsdam (GFZ), 1 Ph.D, 36T €/year, **2001-2002**
2. *Co-PI*, "Natural laboratory Baltic Sea for methodical and technical developments", Federal Ministry of Education and Research (BMBF), 1 Ph.D, 45T €/year, **2001-2002**
1. *PI*, "Analysis of dispersive seismic waves above sub-marine Permafrost in the Laptev Sea", Bundesanstalt für Geowissenschaften and Rohstoffe (BGR), 35T €/year, **1998-1999**

PEER-REVIEWED JOURNAL PAPERS [statistics][Research Gate]

40. Y. Pan, L. Gao and T. Bohlen, "[High-Resolution Characterization of Near-Surface Structures by Surface-Wave Inversions: From Dispersion Curve to Full Waveform](#)", *Surveys in Geophysics* **40(2)**, 167-195 (2019).
39. N. Thiel, T. Hertweck and T. Bohlen, "[Comparison of acoustic and elastic full waveform inversion of 2D towed streamer data in the presence of salt](#)", *Geophysical Prospecting* **67(2)**, 349-361 (2019).

38. F. Wittkamp, N. Athanasopoulos and T. Bohlen, “[Individual and joint 2-D elastic full-waveform inversion of Rayleigh and Love waves](#)”, *Geophysical Journal International* **216**(1), 350-364 (2018).
37. Y. Pan, S. Schaneng, T. Steinweg and T. Bohlen, “[Estimating S-wave velocities from 3D 9-component shallow seismic data using local Rayleigh-wave dispersion curves - A field study](#)”, *Journal of Applied Geophysics* **159**, 532-539 (2018).
36. Y. Pan, L. Gao T. Bohlen, “[Time-domain full-waveform inversion of Rayleigh and Love waves in presence of free-surface topography](#)”, *Journal of Applied Geophysics* **152**, 77-85 (2018).
35. L. Groos, M. Schaefer, Th. Forbriger and T. Bohlen, “[Application of a complete workflow for 2D elastic full-waveform inversion to recorded shallow-seismic Rayleigh waves](#)”, *Geophysics* **82**(2), R109-R117 (2017).
34. T. Bohlen and F. Wittkamp, “[Three-dimensional viscoelastic time-domain finite-difference seismic modelling using the staggered Adams-Bashforth time integrator](#)”, *Geophysical Journal International* **204**(3), 1781-1788 (2016).
33. L. Groos, M. Schaefer, Th. Forbriger and T. Bohlen, “[The role of attenuation in 2D full-waveform inversion of shallow-seismic body and Rayleigh waves](#)”, *Geophysics* **79**(6), R247-R261 (2014).
32. M. Schaefer, L. Groos, Th. Forbriger and T. Bohlen, “[Line-source simulation for shallow-seismic data. Part 2: full-waveform inversion -a synthetic 2-D case study](#)”, *Geophysical Journal International* **198**(3), 1405-1418 (2014).
31. A. Diez, O. Eisen, I. Weikusat, J. Eichler, C. Hofstede, P. Bohleber, T. Bohlen and U. Polom, “[Influence of ice crystal anisotropy on seismic velocity analysis](#)”, *Annals of Glaciology* **55**(67), 97-106 (2014).
30. S. Butzer, A. Kurzmann and T. Bohlen, “[3D elastic full-waveform inversion of small-scale heterogeneities in transmission geometry](#)”, *Geophysical Prospecting* **61**(6), 1238-1251 (2013).
29. A. Kurzmann, A. Przebindowska, D Köhn and T. Bohlen, “[Acoustic full waveform tomography in the presence of attenuation: a sensitivity analysis](#)”, *Geophysical Journal International* **195**(2), 985-1000 (2013).
28. S. Heider, S. Jetschny, and T. Bohlen, “[Towards an automatic seismic localization of human footsteps](#)”, *Near Surface Geophysics* **11**(3), 317-323 (2013).
27. D. Köhn, D. De Nil, A. Kurzmann, A. Przebindowska and T. Bohlen, “[On the influence of model parametrization in elastic full waveform tomography](#)”, *Geophysical Journal International* **191**(1), 325-345 (2012).
26. S. Müller, E. Niederleithinger and T. Bohlen, “[Reverse time migration: a seismic imaging technique applied to synthetic ultrasonic data](#)”, *International Journal of Geophysics* , 7 p (2012).
25. S. Jetschny, T. Bohlen and A. Kurzmann, “[Seismic prediction of geological structures ahead of the tunnel using tunnel surface waves](#)”, *Geophysical Prospecting* **59** (6), 934-946 (2011).

24. M. Brei \ddot{t} cke and T. Bohlen, “Modelling sound propagation in the Southern Ocean to estimate the acoustic impact of seismic research surveys on marine mammals”, *Geophysical Journal International* **181**(2), 818-846 (2010).
23. S. Jetschny, T. Bohlen and D. De Nil, “On the propagation characteristics of tunnel surface waves for seismic prediction”, *Geophysical Prospecting* **58** (2), 245-256 (2010).
22. T. Geerits, X. Tang, O. Hellwig and T. Bohlen, “Multipole borehole acoustic theory: Source imbalances and the effects of an elastic logging tool”, *Journal of Applied Geophysics* **70**(2), 113-143 (2010).
21. S. L \ddot{u} th, A. Rechlin, R. Giese, J. Tzavaras, K. Gross, S. Buske, S. Jetschny, D. De Nil and T. Bohlen, “Seismic prediction ahead of a tunnel face-Modeling, field surveys, geotechnical interpretation”, *International Journal of the JCRM* **4**(2), 47-51 (2009).
20. S. L \ddot{u} th, R. Giese, P. Otto, K. Kr \ddot{u} ger, S. Mielitz, T. Bohlen and T. Dickmann, “Seismic investigations of the Piora Basin using S-wave conversions at the tunnel face of the Piora adit (Gotthard Base Tunnel)”, *International Journal of Rock Mechanics and Mining Sciences* **45**(1), 86-93 (2008).
19. Bohlen, T., Lorang, U., Rabbel, W., M \ddot{u} ller, C., Giese, R., L \ddot{u} th, S., Jetschny, S, “Rayleigh-to-shear wave conversion at the tunnel face - from 3D-FD modeling to ahead-of-drill exploration”, *Geophysics* **72**(6), T67-T79 (2007).
18. Essen, K., Bohlen, T., Friederich, W., Meier, T., “Modelling of Rayleigh-type seam waves in disturbed coal seams and around a coal mine roadway”, *Geophysical Journal International* **170**, 511-526 (2007).
17. Pujol, J., Bohlen, T., Beilecke, T., Rabbel, W., “Multipathing and spectral modulation of the down going wave field in a complex crust: an example from the KTB (Germany) borehole”, *Geophysical Journal International* **169**, 563-578 (2007).
16. Kugler, S., Bohlen, T., Forbriger, T., Bussat, S. and Klein, G., “Scholte-wave tomography for shallow-water marine sediments”, *Geophysical Journal International* **168**(2), 551-570 (2007).
15. Huang, J.-W., Bohlen, T., Milkereit, B., “Numerical Solutions of Seismic Scattering in Heterogeneous Media”, *Canadian SEG Recorder* **31**, 44-47 (2006).
14. Bohlen, T. and Saenger, E.H., “Accuracy of heterogeneous staggered-grid finite-difference modeling of Rayleigh waves”, *Geophysics* **71**(4), T109-T115 (2006).
13. Kugler, S., Bohlen, T., Bussat, S., Klein, G., “Variability of Scholte wave dispersion in shallow-water marine sediments”, *Journal of Environmental and Engineering Geophysics (JEEG)* **10**(2), 203-218 (2005).
12. Klein, G., Bohlen, T., Theilen, F., Kugler, S., Forbriger, T., “Acquisition and inversion of dispersive seismic waves in shallow marine environments”, *Marine Geophysical Researches* **26**(2-4), 287 - 315 (2005).
11. Pujol, J., Rydelek, P., Bohlen, T., “Determination of the trajectory of a fireball using seismic network data”, *Bulletin of the Seismological Society of America (BSSA)* **95**(4), 1496-1509 (2005).

10. Rabbel, W., Beilecke, T., Bohlen, T., Fischer, D., Frank, A., Hasenclever, J., Borm, G., Kück, J., Brahm, G., Druiwenge, G., Lüschen, E., Gebrande, H., Pujol, J., Smithson, S., “[Super-deep vertical seismic profiling at the KTB deep drill-hole \(Germany\)- Seismic close-up view of a major thrust zone down to 8.5 km depth](#)”, *J. Geophys. Res.* **109**, B09309 (2004).
9. Bohlen, T., Kugler, S., Klein, G., Theilen, F., “[1.5-D Inversion of lateral variation of Scholte wave dispersion](#)”, *Geophysics* **69(2)**, 330-344 (2004).
8. Saenger, E., and Bohlen, T. , “[Finite-difference modeling of viscoelastic and anisotropic wave propagation using the rotated staggered grid](#)”, *Geophysics* **69(2)**, 583-591 (2004).
7. Bohlen, T., “[Parallel 3-D viscoelastic finite-difference seismic modelling](#)”, *Computers and Geosciences* **28 (8)**, 887-899 (2002).
6. Müller, Cf., Milkereit, B., Bohlen, T., Theilen, F., , “[Towards high-resolution 3-D marine seismic surveying using Boomer sources](#)”, *Geophysical Prospecting* **50(5)**, 517-526 (2002).
5. Bohlen, T., Rabbel, W., Weiss, T., Siegesmand, S., Pohl, M., “[Recovering shear wave anisotropy of the lower crust: the influence of systematic errors on travelttime inversion](#)”, *Pure appl. geophys* **156**, 123-138 (1999).
4. Weiss, T., Siegesmand, S., Rabbel, W., Bohlen, T., Pohl, M., “[Seismic velocities and anisotropy of the lower continental crust: a review](#)”, *Pure appl. geophys* **156**, 97-122 (1999).
3. Pohl, M., Wenzel, F., Weiss, T. Siegesmand, S., Bohlen, T. and W. Rabbel, “[Realistic models of anisotropic lower crust](#)”, *Pure appl. geophys* **56**, 139-155 (1999).
2. Weiss, T., Siegesmand, S., Bohlen, T., “[Seismic, structural and petrological models of the subcrustal lithosphere in Southern Germany: A quantitative revaluation](#)”, *Pure appl. geophys* **156**, 53-81 (1998).
1. Rabbel, W., Siegesmand, S., Weiss, T., Pohl, M., Bohlen, T., “[Shear wave anisotropy of laminated lower crust beneath Urach \(SW Germany\): a comparison with xenoliths and with exposed lower crustal sections](#)”, *Tectonophysics* **298**, 337-365 (1998).

PAPERS ON TEACHING

3. Barth, A., Schöneberger, L., Lohner, D., Holstein, S., Bohlen, T. , Rietbrock, A., “[iBRIDGE - Interaktiver BRückenkurs In Das GEophysik-Masterstudium und Einrichtung eines digitalen, freien Lehrmittelpools](#)”, *Mitteilungen der Deutschen Geophysikalischen Gesellschaft* **1/2018**, 15-17 (2018).
2. Gottschämmer, E., Pontius, M., Busch, N. and Bohlen, T. , “[Erdbebenregistrierung mit Seismometern](#)”, *Plus lucis* **3**, 11-17 (2017).
1. Gottschämmer, E., Heck, A., Schneider, N., Bergmann, A. and Bohlen, T. , “[Zerstörungsfreie Materialuntersuchung: Gleichstromgeoelektrik](#)”, *Plus lucis* **3**, 23-29 (2017).

BOOK CHAPTER

10. A. Kurzmann, L. Gassner, R. Shigapov, N. Thiel, N. Athanasopoulos, [T. Bohlen](#) and T. Steinweg, “[Real Data Applications of Seismic Full Waveform Inversion](#)”, *High Performance Computing in Science and Engineering 17* **467-484**, (2018).
9. A. Kurzmann, L. Gassner, N. Thiel, M. Kunert, R. Shigapov, F. Wittkamp, [T. Bohlen](#) and T. Metz, “[Seismic Applications of Full Waveform Inversion](#)”, *High Performance Computing in Science and Engineering 16* **647-665**, (2016).
8. T. Forbriger et al. (24 authors), “[Toolbox for Applied Seismic Tomography \(TOAST\)](#)”, *Tomography of the Earth’s Crust: From Geophysical Sounding to Real-Time Monitoring. Advanced Technologies in Earth Sciences* , Springer (2014).
7. S. Lüth, [T. Bohlen](#), R. Giese, S. Heider, S. Hock, S. Jetschny, U. Polom, S. Wadas, A. Rechlin, “[Seismic Tomography and Monitoring in Underground Structures: Developments in the Freiberg Reiche Zeche Underground Lab \(Freiberg, Germany\) and Their Application in Underground Construction \(SOUND\)](#)”, *Tomography of the Earth’s Crust: From Geophysical Sounding to Real-Time Monitoring. Advanced Technologies in Earth Sciences* , Springer (2014).
6. A. Kurzmann, S. Butzer, S. Jetschny, A. Przebindowska, L. Groos, M. Schäfer, S. Heider [T. Bohlen](#), “[Acoustic and Elastic Full Waveform Tomography](#)”, *High Performance Computing in Science and Engineering 13* , (2013).
5. M. Breitzke and [T. Bohlen](#), “[Modeling Cumulative Sound Exposure Along a Seismic Line to Assess the Risk of Seismic Research Surveys on Marine Mammals in the Antarctic Treaty Area](#)”, In: Popper A.N., Hawkins A. (eds) *The Effects of Noise on Aquatic Life. Advances in Experimental Medicine and Biology*, vol 730. Springer, New York , (2012).
4. Duveneck, E., Müller, C., [Bohlen, T.](#), “[Imaging of Ore bodies with Vertical Seismic Profiling Data](#)”, In: *Wenzel F. (eds) Perspectives in Modern Seismology. Lecture Notes in Earth Sciences Springer Verlag*, Vol 105 (2005).
3. Milkereit, B., Adam, E., Li, Z., Qian, W., [Bohlen, T.](#), Banerjee, D., Schmitt, D.R., “[Multi-offset vertical seismic profiling - an experiment to assess petrophysical scale parameters at the JAPEX/JNOC/GSC et al. Mallik 5L-38 gas hydrate production research well](#)”, in *Scientific Results from the Mallik 2002 Gas Hydrate Production Research Well Program, Mackenzie Delta, Northwest Territories, Canada*, (ed.) S.R. Dallimore and T.S. Collet **Geological Survey of Canada, Bulletin**, 585 13p (2004).
2. [Bohlen, T.](#), Müller, Cf., Milkereit, B., “[Elastic wave scattering from massive sulfide ore bodies: on the role of composition and shape](#)”, in: *Eaton, D., Milkereit, B. and Salisbury, M., Eds., Book on Hardrock Seismic Exploration SEG Developments in Geophysics series*, No. 10 (2003).
1. Adam, E., [Bohlen, T.](#), Milkereit, B., “[Vertical seismic profiling at the Bell Allard ore body, Matagami, Quebec](#)”, in: *Eaton, D., Milkereit, B. and Salisbury, M., Eds., Book on Hardrock Seismic Exploration SEG Developments in Geophysics series*, No. 10 (2003).

SELECTED EXPANDED ABSTRACTS (REVIEWED)

49. V. Krampe, Y. Pan and T. Bohlen, [Full-Waveform Inversion of Near-Surface Seismic Data in Anisotropic Media](#), 24th European Meeting of Environmental and Engineering Geophysics, **2018**
48. N. Athanasopoulos, E. Manukyan, T. Bohlen and H. Maurer, [Application of Structurally Similarity Constraints on Time-Domain Elastic Full-Waveform Inversion](#), 24th European Meeting of Environmental and Engineering Geophysics, **2018**
47. M. Causemann, Y. Pan and T. Bohlen, [Finite Difference Modelling of Rayleigh Waves with Nonuniform Grid Spacing](#), 24th European Meeting of Environmental and Engineering Geophysics, **2018**
46. N. Athanasopoulos, E. Manukyan, T. Bohlen and H. Maurer, [Accurate Reconstruction of Shallow P-wave Velocity Model with Time-windowed Elastic Full-waveform Inversion](#), 80th EAGE Conference and Exhibition, **2018**
45. T. Lei, T. Bohlen and W. Zhang, [Full waveform inversion using truncated Newton optimization](#), SEG Technical Program Expanded Abstracts, **2018**
44. N. Athanasopoulos and T. Bohlen, [Aquifer Characterization Using Elastic Full-waveform Inversion](#), 23rd European Meeting of Environmental and Engineering Geophysics, **2017**
43. Y. Pan, L. Gao and T. Bohlen, [Sequential Phase-velocity and Waveform Inversion of Shallow-seismic Surface Waves - A Field Example for Bedrock Mapping](#), 23rd European Meeting of Environmental and Engineering Geophysics, **2017**
42. N. Athanasopoulos and T. Bohlen, [Field Data Application of Sequential Full-waveform Inversion of Refracted and Rayleigh Waves](#), 79th EAGE Conference and Exhibition, **2017**
41. F. Wittkamp, T. Bohlen and T. Steinweg, [Finite-difference Seismic Modeling on CPUs/GPUs Using Matrix-vector Products](#), 79th EAGE Conference and Exhibition, **2017**
40. L. Gao, Y. Pan, J. Xia, T. Bohlen and G. Tian, [Feasibility of Detecting Groundwater Flow via Analyzing Radial Anisotropy Estimated by Surface Waves](#), 79th EAGE Conference and Exhibition, **2017**
39. N. Athanasopoulos and T. Bohlen, [Sequential Full-waveform Inversion of Refracted and Rayleigh Waves](#), Near Surface Geoscience, **2016**
38. F. Wittkamp and T. Bohlen, [Field Data Application of Individual and Joint 2-D Elastic Full Waveform Inversion of Rayleigh and Love Waves](#), Near Surface Geoscience, **2016**
37. F. Wittkamp and T. Bohlen, [Individual and Joint 2-D Elastic Full Waveform Inversion of Rayleigh and Love Waves](#), 78th EAGE Conference and Exhibition, **2016**
36. M. Kunert, A. Kurzmann and T. Bohlen, [Application of 2D Acoustic Full Waveform Inversion to OBC-data in Shallow Water](#), 78th EAGE Conference and Exhibition, **2016**
35. H.B. Santos, J. Schleicher, A. Novais, A. Kurzmann and T. Bohlen, [Robust Time-domain Migration Velocity Analysis Methods for Initial-model Building in a Full Waveform Tomography Workflow](#), 78th EAGE Conference and Exhibition, **2016**

34. A. Kurzmann, R. Shigapov and T. Bohlen, [Viscoacoustic Full Waveform Inversion for Spatially Correlated and Uncorrelated Problems in Reflection Seismics](#), 77th EAGE Conference and Exhibition, **2015**
33. T. Bohlen and F. Wittkamp, [Higher Order FDTD Seismic Modelling Using the Staggered Adams-Bashforth Time Integrator](#), 77th EAGE Conference and Exhibition, **2015**
32. T. Bohlen, T. Forbriger, L. Groos, M. Schäfer, C. Wolf and M. Binnig, [Applications of 2-D Elastic Full Waveform Inversion to Shallow Seismic Rayleigh Waves](#), 77th EAGE Conference and Exhibition, Workshops, **2015**
31. L. Groos, M. Schäfer, T. Forbriger and T. Bohlen, [Challenges for 2-D elastic Full Waveform Inversion of Shallow-seismic Rayleigh Waves](#), 76th EAGE Conference and Exhibition, **2014**
30. L. Groos, M. Schäfer, T. Forbriger and T. Bohlen, [Comparison of 1D Conventional and 2D Full Waveform Inversion of Recorded Shallow Seismic Rayleigh Waves](#), Near Surface Geoscience, **2013**
29. M. Schäfer, L. Groos, T. Forbriger and T. Bohlen, [2D Full Waveform Inversion of Recorded Shallow Seismic Rayleigh Waves on a Significantly 2D Structure](#), Near Surface Geoscience, **2013**
28. M. Schäfer, L. Groos, T. Forbriger and T. Bohlen, [On the Effects of Geometrical Spreading Corrections for a 2D Full Waveform Inversion of Recorded Shallow Seismic Surface Waves](#), 74th EAGE Conference and Exhibition, **2012**
27. L. Groos, M. Schäfer, T. Forbriger and T. Bohlen, [On the Significance of Viscoelasticity in a 2D Full Waveform Inversion of Shallow Seismic Surface Waves](#), 74th EAGE Conference and Exhibition, **2012**
26. S. Dunkl, A. Kurzmann and T. Bohlen, [3D Elastic Full Waveform Inversion - A Random Medium Example](#), 74th EAGE Conference and Exhibition, **2012**
25. A. Przebindowska, A. Kurzmann, D. Köhn and T. Bohlen, [The Role of Density in Acoustic Full Waveform Inversion of Marine Reflection Seismics](#), 74th EAGE Conference and Exhibition, **2012**
24. I. Veile, T. Geerits and T. Bohlen, [Efficient 3D Borehole Modeling of the Reflected Wave Field While Drilling](#), 74th EAGE Conference and Exhibition, **2012**
23. O. Hellwig, T. W. Geerits and T. Bohlen, [Accuracy of 2.5D Seismic FDTD Modeling in the Presence of Small Scale Borehole Structures](#), 73rd EAGE Conference and Exhibition, **2011**
22. A. Przebindowska, A. Kurzmann, T. Bohlen and D. Köhn, [2D Acoustic Full Waveform Tomography of Marine Streamer Data - Problems and Data Preprocessing](#), 73rd EAGE Conference and Exhibition, **2011**
21. D. Köhn, D. De Nil, A. Przebindowska, A. Kurzmann and T. Bohlen, [2D Elastic Full Waveform Tomography of Synthetic Marine Reflection Seismic Data](#), 72nd EAGE Conference and Exhibition, **2010**
20. S. Jetschny, T. Bohlen and A. Kurzmann, [Detection of Geological Structures Ahead of the Tunnel Construction Using Tunnel Surface-waves](#), 72nd EAGE Conference and Exhibition, **2010**

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1. C.-F.-Gauss-Lecture of the German Geophysical Society, EGU Vienna, [Where no wave has gone before: unconventional elastic wave fields in exotic regimes](#), 4/25/2012,

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19. Renat Shigapov, [“Probabilistic waveform inversion: Quest for the law”](#), KIT, 2019
18. Laura Gassner, [“Imaging of gas-hydrate deposits with full-waveform inversion of ocean-bottom seismic data”](#), KIT, 2018
17. Niklas Thiel, [“Acoustic and elastic FWI of marine dual-sensor streamer data in the presence of salt”](#), KIT, 2018
16. Olaf Hellwig, [“Seismic exploration ahead of boreholes using borehole-guided waves”](#), TU BA Freiberg, 2017
15. Simone Butzer, [“3D elastic time-frequency full-waveform inversion”](#), KIT, 2015
14. Martin Schäfer, [“Application of full-waveform inversion to shallow-seismic Rayleigh waves on 2D structures”](#), KIT, 2014
13. Sven Heider, [“2D Elastic Full-Waveform Tomography of Vibro-Seismic Data in Crystalline Host Rock at the GFZ-Underground-Lab, Freiberg”](#), KIT, 2014

12. Anja Diez, "[Effects of cold glacier ice crystal anisotropy on seismic data](#)", KIT, 2013
11. Lisa Groos, "[2D full waveform inversion of shallow seismic Rayleigh waves](#)", KIT, 2013
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11. Modeste Irakarama, "[Towards reducing structural interpretation uncertainties using seismic data](#)", U Lorraine, 2019
10. Phuong-Thu Trinh, "[3D Multi-parameters Full Waveform Inversion for challenging land targets](#)", U Grenoble Alpes, 2018
9. Zhen Xing, "[Two-grid full waveform surface wave inversion by means of genetic algorithm](#)", U Pisa, 2018
8. Weigung He, "[Elastic full waveform inversion in vertically transversely isotropic media](#)", IGGP Paris, 2017
7. Andre Nuber, "[Elastic Full Waveform Inversion of Near-Surface Seismic Data Incorporating Topography](#)", ETH Zurich, 2017
6. Paul Wellington, "[Efficient 1D, 2D and 3D geostatistical constraints and their application to Full Waveform Inversion](#)", U Grenoble Alpes, 2016
5. Marcin Pussak, "[Seismic characterization of geothermal reservoirs by application of the common-reflection-surface stack method and attribute analysis](#)", GFZ Potsdam, 2014

4. Florian Schumacher, "Modularized iterative full seismic waveform inversion for 3D-heterogeneous media based on waveform sensitivity kernels", U Bochum, 2014
3. Anja Klotzsche, "Full-waveform inversion of crosshole GPR data for hydrogeological applications", FZ Jülich, 2013
2. Aissa Rechlin, "Rock-Mass Classification in Tunneling based on Seismic Velocities and Tunnel-Driving Data using Support Vector Machines", FU Berlin, 2012
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