

CURRICULUM VITAE

Dr. Bernhard Schuberth

Personal Information

Date and Place of Birth: 21.7.1977, Regensburg

Nationality: German

Address: Plantagenweg 1, 85354 Freising, Germany

E-mail: bernhard.schuberth@geophysik.uni-muenchen.de

Professional Experience

Since January 2013	Senior Scientist , Geophysics Section, Dept. of Earth and Environmental Sciences, Ludwig-Maximilians-Universität München (LMU), Munich, Germany
Mar. 2012 – Dec. 2012	Assistant Professor , Geophysics Section, Dept. of Earth and Environmental Sciences, LMU, Munich, Germany
Feb. 2010 – Jan. 2012	Marie-Curie Fellow , Seismology Section, UMR GéoAzur, Sophia Antipolis, France
Jul. 2009 – Jan. 2010	Post-Doc in computational seismology and geodynamics , LMU Munich, Germany
2004 – 2009	Ph.D. student in computational seismology and geodynamics within the International Graduate College <i>THESIS</i> of the <i>Elite-Netzwerk Bayern</i> , LMU Munich
Mar./Apr. 2004	Graduate Assistant , Geophysics Section, LMU Munich

Education

Nov. 2023	Habilitation in Geophysics (accreditation to supervise research) Thesis: <i>Tight Constraints on Buoyancy in Earth's Mantle - An integrated framework to bridge the gap between geophysical hypotheses and observations</i>
Jul. 2009	Dr. rer. nat. summa cum laude in Geophysics Thesis: <i>Thermal, Elastic and Seismic Signature of High-Resolution Mantle Circulation Models</i>
Feb. 2004	Diplom in Geophysics <i>with distinction</i> Thesis: <i>The Spectral Element Method for Seismic Wave Propagation – Theory, Implementation and Comparison to Finite Difference Methods</i>
1997 – 2004	Studies of Geophysics , LMU Munich

Awards & Fellowships

2010 – 2012	Marie-Curie Intra-European Fellowship
2004 – 2009	PhD student within the Elite-Netzwerk Bayern
Mar. 2008	Best Oral Presentation , German Geophysical Society (DGG), 67 th Annual Meeting 2007, Aachen, Germany
Jun. 2004	Edison Award – Silver Prize for the diploma thesis, General Electrics Foundation and the Institute of International Education

Funding

2023	German Science Foundation, Project SCHU 2914/10-1 "Influence of the plate motion reference frame on lowermost mantle structure, evolution, and core-mantle boundary heat flow"	Budget: 235 k €
2020	German Science Foundation, Project SCHU 2914/7-1 "Understanding the impact of seismic data errors and tomographic model uncertainties on geodynamic inverse simulations of mantle evolution"	Budget: 227 k €
2019	German Science Foundation, Project SCHU 2914/5-1 "HYPO-TZ – Generation and assessment of hypothetical seismic mantle transition zone structures"	Budget: 214 k €
2009	Marie-Curie Intra-European Fellowship within the 7th European Community Framework Programme (PIEF-GA-2009-235861)	Budget: 173 k €

Computing Budgets

2022	Access to SuperMUC-NG , Leibniz Supercomputing Centre (LRZ)	44.0
2019	Access to SuperMUC-NG , LRZ	35.0
2015	Access to SuperMUC , LRZ	35.0
2009	Access to DEISA supercomputing infrastructure (DECI-5)	0.76
2009	Access to HLRB II , LRZ	1.7

Outreach

Exhibits	3-D models (analogue and virtual) , <i>American Museum of Natural History (AMNH) in New York, USA</i> in cooperation with the Leibniz Supercomputing Centre Garching/München (LRZ)
3-D Visualisations	Generation of a stereographic film for the planetarium of the Deutsches Museum in Munich in cooperation with the LRZ
Public talks	Virtual-reality–Mixed-reality Meetup (2016), Freundeskreis der Geologischen Staatssammlung München (2017)

Professional Service

Referee	For scientific journals: Earth Planet. Sci. Lett., Geochem. Geophys. Geosyst., Geophys. J. Int. For funding agencies: National Science Foundation (USA), Agence National de la Recherche (France), Schweizerischer Nationalfonds (Switzerland), Gauss Centre for Supercomputing
Convener	General Assembly of the European Geosciences Union (EGU), Fall Meeting of the American Geophysical Union (AGU), SEDI Symposium (Study of Earth's Deep Interior, a Committee of IUGG)
Thesis commissions	PhD thesis of S. Ritterbex (2016; Université de Lille; external member)
Administration	Representative of the research staff within the Dept. of Earth and Environmental Sciences , LMU Munich (2018–present) Representative of the research staff within the Faculty of Geosciences , LMU Munich (2019–2021)

Supervision

4 PhD projects (ongoing), 6 PhD projects as co-supervisor, 12 Master theses, 11 Bachelor theses, 4 internship projects

Field Experience

2003/2004

Installation and maintenance of seismometers in the Bavarian Forest

2002

Expedition to the Arctic Sea onboard the RV Polarstern (2 months)

- Marine reflection seismics
- Helicopter airborne magnetic surveys

10 Most Important Publications

1. Papanagnou, I., **Schuberth, B.S.A.** and C. Thomas (2022), *Geodynamic predictions of seismic structure and discontinuity topography of the mantle transition zone*, Geophys. J. Int., doi:10.1093/gji/ggac478.
2. **Schuberth, B.S.A.** and T. Bigalke (2021), *From Mantle Convection to Seismic Observations: Quantifying the Uncertainties Related to Anelasticity*, in *Mantle Convection and Surface Expressions*, Eds. Marquardt, H., Ballmer, M., Cottaar S. and J. Konter, pp.97–120, AGU Geophysical Monograph Series Vol. 263, John Wiley & Sons Inc., Hoboken, NJ, USA, doi:10.1002/9781119528609.ch4.
3. Freissler, R., C. Zaroli, S. Lambotte and **B.S.A. Schuberth** (2020), *Tomographic filtering via the generalized inverse: A way to account for seismic data uncertainty*, Geophys. J. Int., doi:10.1093/gji/ggaa231.
4. Koelemeijer, P., **B.S.A. Schuberth**, D.R. Davies, A. Deuss and J. Ritsema (2018), *Constraints on the presence of post-perovskite in Earth's lowermost mantle from tomographic-geodynamic model comparisons*, Earth Planet. Sci. Lett., 494, 226–238, doi:10.1016/j.epsl.2018.04.056.
5. Chust, T. C., G. Steinle-Neumann, D. Dolejs, **B.S.A. Schuberth** and H.-P. Bunge (2017), *MMA-EoS: A computational framework for mineralogical thermodynamics*, J. Geophys. Res.: Solid Earth, 122, 9881–9920, doi:10.1002/2017JB014501.
6. **Schuberth, B.S.A.**, C. Zaroli and G. Nolet (2015), *Traveltime dispersion in an isotropic elastic mantle: Strong lower mantle signal in differential-frequency residuals*, Geophys. J. Int., 203(3), 2099–2118, doi:10.1093/gji/ggv389.
7. Davies, D.R., S. Goes, J.H. Davies, **B.S.A. Schuberth**, H.-P. Bunge and J. Ritsema (2012), *Reconciling dynamic and seismic models of Earth's lower mantle: the dominant role of thermal heterogeneity*, Earth Planet. Sci. Lett., 353–354, 253–269, doi:10.1016/j.epsl.2012.08.016.
8. **Schuberth, B.S.A.**, C. Zaroli and G. Nolet (2012), *Synthetic seismograms for a synthetic Earth: long-period P- and S-wave traveltimes variations can be explained by temperature alone*, Geophys. J. Int., 188(3), 1393–1412, doi:10.1111/j.1365-246X.2011.05333.x.
9. **Schuberth, B.S.A.**, H.-P. Bunge and J. Ritsema (2009), *Tomographic filtering of high-resolution mantle circulation models: Can seismic heterogeneity be explained by temperature alone?*, Geochem. Geophys. Geosyst., 10, Q05W03, doi:10.1029/2009GC002401, (**Highlighted in EOS, Vol. 90, Nr. 28, 2009**).
10. **Schuberth, B.S.A.**, H.-P. Bunge, G. Steinle-Neumann, C. Moder, and J. Oeser (2009), *Thermal versus elastic heterogeneity in high-resolution mantle circulation models with pyrolite composition: High plume excess temperatures in the lowermost mantle*, Geochem. Geophys. Geosyst., 10(1), Q01W01, doi:10.1029/2008GC002235.