Eric Löberich

Curriculum Vitae

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Personal Data

Name	Eric Löberich
Born	02.10.1989 in Bautzen, Germany
Work Address	Department of Meteorology and Geophysics, University of Vienna
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Research Experience

9/2020–5/2022 **Guest Researcher**, *Department of Meteorology and Geophysics*, University of Vienna, Austria, *Seismic Anisotropy: Non-vertical incidence shear-wave splitting.*

11/2015–5/2022 **PhD Student**, *Department of Meteorology and Geophysics*, University of Vienna, Austria, *Seismic Anisotropy: Non-vertical incidence shear-wave splitting.*

5/2020–8/2020 **Research Assistant**, *Department of Meteorology and Geophysics*, University of Vienna, Austria, *AlpArray Project: Non-vertical incidence shear-wave splitting.*

5/2014–3/2015 **Research Assistant**, *Institute of Geophysics and Geoinformatics*, TU Bergakademie Freiberg, Germany, *HISS Project: Double-difference tomography in West Bohemia.*

4/2013–6/2013 **Student Research Assistant**, *Institute of Drilling Engineering and Fluid Mining*, TU Bergakademie Freiberg, Germany, *Project Geoground: Matlab and Comsol interaction.*

10/2011–2/2012 **Student Research Assistant**, *Institute of Geophysics and Geoinformatics*, TU Bergakademie Freiberg, Germany, *Engineering Seismology: Event identification and field work assistance.*

8/2011 **Internship**, *Institute of Planetary Research*, German Aerospace Center Berlin, Germany, *The effects of temperature- and pressure-dependent thermal expansivity on mantle convection.*

Teaching Experience

WS 2017/2018
WS 2018/2019
WS 2019/2020

Teaching Assistant for Seismic Anisotropy, *Department of Meteorology and Geophysics*, University of Vienna, Austria, *Exercise: MSAT and SplitLab.*

WS 2016/2017
WS 2017/2018

Teaching Assistant for Inverse Problems, *Department of Meteorology and Geophysics*, University of Vienna, Austria, *Exercises: Matlab Introduction, Linear Regression, SVD, TSVD and Tikhonov Regularization.*

Education

2022 **Dr.rer.nat. (1.0/graded with honors)**, *Doctoral Programme Natural Sciences: Geophysics*, Department of Meteorology and Geophysics, University of Vienna, Austria.

2015 **M.Sc. (1.2/ECTS-Rang: A)**, *Master Programme: Geophysics*, Institute of Geophysics and Geoinformatics, TU Bergakademie Freiberg, Germany.

2013 **B.Sc. (1.9/ECTS-Rang: B)**, *Bachelor Programme: Geoscience Informatics and Geophysics*, Institute of Geophysics and Geoinformatics, TU Bergakademie Freiberg, Germany.

2008 **A level (1.7)**, Schiller-Gymnasium Bautzen, Germany.

Software Skills

OS	Windows ●●●	Linux ●●○	
PL	Matlab ●●●	Fortran ●○○	C/C++ ●○○
CL	Bash (Shell) ●●○		
Anisotropy	SplitLab ●●●	MSAT ●●○	
DD Tomography	TomoDD ●●○		
Exploration	Seismic Unix ●●○	Promax ●○○	
Mapping	GMT ●●○		
Modeling	Comsol ●○○	Paraview ●○○	
Monitoring	Swarm ●●○	ObsPy ●○○	
Office	Microsoft Office ●●●	LaTeX (Texmaker) ●●○	

Language Skills

German	Native Proficiency
English	Professional Working Proficiency (UNIcert Level 3)
Russian	Elementary Proficiency

Research Interests

Upper mantle deformation	Seismic anisotropy of olivine fabric types
	Lithospheric vs. asthenospheric origin of shear-wave splitting
	Flow types, partial melts and hydration around subduction zones
Crustal tectonics	Localization and clustering of swarm seismicity
	Vp/Vs distribution from double-difference tomography
Landslides	Seismic monitoring and localization

Volunteering and Memberships

2018–2022 **Early Career Scientist Co-Representative**, *EGU Seismology Division.*

2016–2022 **Student Member**, *EGU.*

2020 **Student Member**, *AGU.*

2016 **Student Member**, *EAGE.*

2011–2015 **Supervisor of Seismic Field Training**, *Geophysical Society (SEG Student Chapter)*, TU Bergakademie Freiberg, Germany.

Fellowships

11/2019–4/2020 **Dissertation Completion Fellowship**, *University of Vienna.*

Publications

2022 **Löberich, E.**, *Constraints on the Origin of Anisotropy in the Upper Mantle: More Insights from SKS Shear-Wave Splitting*, Doctoral Thesis

2021 **Löberich, E., Long, M. D., Wagner, L. S., Qorbani, E., and Bokelmann, G.**, *Constraints on Olivine Deformation From SKS Shear-Wave Splitting Beneath the Southern Cascadia Subduction Zone Back-Arc*, Geochemistry, Geophysics, Geosystems, 22(11):e2021GC010091, 2021, doi: 10.1029/2021GC010091

2020 **Löberich, E. and Bokelmann, G.**, *Mantle flow under the Central Alps: Constraints from non-vertical SKS shear-wave splitting*, Solid Earth Discussions, preprint(February):1-41, 2020b, doi: 10.5194/se-2020-5

Löberich, E. and Bokelmann, G., *Flow plane orientation in the upper mantle under the Western/Central United States from SKS shear-wave splitting observations*, Geophysical Journal International 221(2):1125-1137, 2020a, doi:10.1093/gji/ggaa060

2015 **Löberich, E.**, *Double-Difference Tomography in the West Bohemia Seismic Zone - A Study of the 2011 Earthquake Swarm*, Master Thesis

2013 **Löberich, E.**, *Seismological monitoring of landsides in the environment of flooded open pit brown coal mines*, Bachelor Thesis (german)

Talks

2019 **Löberich, E. and Bokelmann, G.**, *Mantle flow under the Central Alps: Constraints from non-vertical SKS shear-wave splitting*, AlpArray Anisotropy Workshop, Vienna, Austria

2018 **Löberich, E., Qorbani, E. and Bokelmann, G.**, *The influence of near-vertical SK(K)S ray path incidence on the backazimuthal variation of shear-wave splitting parameters: A case study in the Pacific Northwest*, ESC: General Assembly, Valletta, Malta

Löberich, E., Qorbani, E. and Bokelmann, G., *The influence of near-vertical SK(K)S ray path incidence on the backazimuthal variation of shear-wave splitting parameters: A case study in the Pacific Northwest*, EGU: General Assembly, Vienna, Austria

2015 **Löberich, E., Alexandrakis, C., Calò, M., Vavryčuk, V. and Buske, S.**, *Double-Difference Tomography in the West Bohemia Seismic Zone: A Study of the 2011 Earthquake Swarm*, DGG: Annual Meeting, Hannover, Germany

Poster, Pico and Display Contributions

2021 **Löberich, E., Long, M. D., Wagner, L. S., Qorbani, E., and Bokelmann, G.**, *Constraints on Olivine Deformation Mechanisms from SKS Shear-Wave Splitting beneath the High Lava Plains, Northwestern Basin and Range and Western Yellowstone Snake River Plain*, vPico, EGU: General Assembly (online)

2020 **Löberich, E., Long, M. D., Wagner, L. S., Qorbani, E., and Bokelmann, G.**, *Constraints on Olivine Deformation Mechanisms from SKS Shear-Wave Splitting beneath the High Lava Plains and Northern Basin and Range*, iPoster, AGU: Fall Meeting (online)

Löberich, E. and Bokelmann, G., *Mantle flow under the Central Alps: Constraints from non-vertical-ray SKS shear-wave splitting*, Display, EGU: General Assembly (online)

2019 **Löberich, E. and Bokelmann, G.**, *Flow plane orientation in the upper mantle under the United States from SKS shear-wave splitting observations*, Poster, CTBT: Science and Technology Conference, Vienna, Austria

Löberich, E. and Bokelmann, G., *Flow plane orientation in the upper mantle under the United States from SKS shear-wave splitting observations*, Poster, EGU: General Assembly, Vienna, Austria

2018 **Löberich, E., Bokelmann, G. and AlpArray-EASI Working Group**, *Preliminary results for the EASI Profile: A comparison of manual and automatic shear-wave splitting approaches*, Poster, 1st AlpArray Science Meeting, Zurich, Switzerland

Löberich, E., Qorbani, E. and Bokelmann, G., *The influence of near-vertical SK(K)S ray path incidence on the backazimuthal variation of shear-wave splitting parameters: A case study in the Pacific Northwest*, Poster, DGG: Annual Meeting, Leoben, Austria

2017 **Löberich, E., Qorbani, E. and Bokelmann, G.**, *The influence of near-vertical SK(K)S ray path incidence on the backazimuthal variation of shear-wave splitting parameters: A case study of the Central Alps*, Poster, DMG PhD Short Course: Mineralogy, Mineral Physics and Seismology of Earth's Mantle, Bayreuth, Germany

Löberich, E., Qorbani, E. and Bokelmann, G., *The influence of near-vertical SK(K)S ray path incidence on the backazimuthal variation of shear-wave splitting parameters: A case study of the Central Alps*, Poster, EGU: General Assembly, Vienna, Austria

2016 **Löberich, E. and Bokelmann, G.**, *Analytical study of body waves in orthorhombic media and comparison with SKS-phase observations*, Poster, Flow in the deep Earth Workshop, Paris, France

Löberich, E. and Bokelmann, G., *Analytical study of body waves in orthorhombic media and comparison with SKS-phase observations*, Poster, Anisotropy and Dynamics of the Lithosphere-Asthenosphere System Workshop, Prague, Czech Republic

Löberich, E. and Bokelmann, G., *Analytical study of body waves in orthorhombic media and comparison with SKS-phase observations from selected stations*, Poster, EGU: General Assembly, Vienna, Austria

Löberich, E., Alexandrakis, C., Calò, M., Vavryčuk, V. and Buske, S. *Double-Difference Tomography in the West Bohemia Seismic Zone: A Study of the 2011 Earthquake Swarm*, Poster, EGU: General Assembly, Vienna, Austria

Attendences without Contribution

2018 **4th TIDES Advanced Training School: Earthquakes, volcanoes, glaciers, landslides, reservoirs, cities, ...**, *Prague, Czech Republic.*

2017 **CTBT: Science and Technology Conference**, *Vienna, Austria.*

2016 **EAGE: Annual**, *Vienna, Austria.*

6th Munich Earth Skience School: Induced Seismicity, *Bayrischzell, Germany.*