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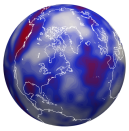
Laura A. Ermert | CV

Ambient noise seismology and site effects



- Articles: Google Scholar, ORCID
- Code: Github
- Social: ResearchGate, Twitter
- Personal: Webpage

Experience

Postdoctoral Fellow // Harvard University (quake.fas.harvard.edu) 2020 -

- Ambient noise based monitoring
- Basin effects

Postdoc Mobility Fellow // University of Oxford (seis.earth.ox.ac.uk) 2018 - 2019

- Regional-scale ambient seismic source inversion
- Contributions to supervision and tutoring

Research assistant // ETH Zürich (cos.ethz.ch) 2017 / 07 - 12

- Elaborating a frequency-dependent global ambient seismic source model
- Contribution to a web portal for daily ambient seismic source maps

Education

Doktorin der Wissenschaften (ETH Zürich) 2017 / 06

- PhD Thesis: Ambient seismic source inversion
- Supervisor: Andreas Fichtner

MSc with distinction in Earth Sciences (ETH Zürich) 2013

- Major in Geophysics
- Master Thesis on seismic resonance of Alpine Valley sediment fill

BSc in Earth Sciences (ETH Zürich) 2017 - 2011

- Geology Profile
- Bachelor Thesis in Earth surface dynamics

Exchange

ERI short-term visitor (Earthquake Research Institute, Tokyo) 2019 / 09

- Seismic wave propagation model for Sea of Japan region
- Host: Kiwamu Nishida

JSPS strategic Fellow (Earthquake Research Institute, Tokyo) 2016 / 09 - 12

- Identifying strong-noise events in the Sea of Japan
- Host: Kiwamu Nishida

Visiting Student Researcher (University of California, Berkeley) 2009 / 08 - 12

- Classes in geomorphology, seismology and sedimentology

Teaching

Supervised Students

- Jonas Igel, MSc 2019, ETH Zürich
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Tutor / Field instructor / Teaching assistant

- Vector Calculus, Earth Science undergraduate, Oxford University, Michaelmas 2018
- Geophysical fieldwork, Earth Science undergraduate, ETH Zürich, Spring terms 2013, 2014, 2015
- Dynamische Erde, Earth Science undergraduate, ETH Zürich, 2011
- Mathematik I & II, Earth / Agriculture / Food Science undergraduate, ETH Zürich, 2010

Awards

Grants and Studentships

- Swiss National Science Foundation Early Postdoc Mobility 2018 - 2019
- Scholar of German National Academic Foundation 2007 - 2013

Awards

- MSc thesis: ETH medal 2013
- MSc thesis: Swiss society for Earthquake engineering and structural dynamics award

Short-term and travel grants

- Roland Schlich Travel Grant, EGU General Assembly 2019
- JSPS strategic Fellowship, 2016

Seminars

Academia Sinica (Taipei, Taiwan) 2019 / 09

- Talk at Workshop on Frontiers in seismic interferometry

Utrecht University (Utrecht, Netherlands) 2018 / 06

- Talk at Doctoral defense symposium of Nienke Blom

TIDES Advanced training school (Sesimbra, Portugal) 2016 / 09

- Software Tutorial

Institut du Physique de Globe (Paris France) 2015 / 06

- IPGP Seminar

Community

Co-convener

- AGU Fall meeting 2020: Session "Correlation seismology"
- EGU General assembly 2020: Session "Ambient seismic noise: Topics, targets, tools & techniques"
- EGU General assembly 2019: Session "Ambient seismic noise: Topics, targets, tools & techniques"

Peer-reviewing

- Geophysical Journal International (Outstanding reviewer 2019)
- Journal of Geophysical Research (2019 Editor's citation for excellence in refereeing)
- Geophysical Research Letters

Blog Co-editor 2016 - 2018

- EGU seismology division blog

Languages

Human

- English (fluent)
- German (native speaker)
- French (B2-C1)
- Italian (basic)

Programming

- Python
- Passive knowledge of Fortran
- Supporting tools: Git, bash, slurm

Publications

Under review

- Ermert, L., Igel, J., Sager, K., Stutzmann, E., Nissen-Meyer, T., and Fichtner, A. (2020): noisi: A Python tool for ambient noise cross-correlation modeling and noise source inversion, Under Review for Solid Earth Discuss., https://doi.org/10.5194/se-2020-57.
- Fichtner, A., Bowden, D. and Ermert, L. (2020): Optimal Processing for Seismic Noise Correlations. EarthArXiv, May 27. doi:10.31223/osf.io/qetk5.

Peer-reviewed journal articles

- Sager, K., Boehm, C., Ermert, L., Krischer, L., and Fichtner, A. (2020). Global-Scale Full-Waveform Ambient Noise Inversion. J. Geophys. Res.: Solid Earth, 125(4), e2019JB018644.
- Sager, K., Boehm, C., Ermert, L., Krischer, L., and Fichtner, A. (2018). Sensitivity of seismic noise correlation functions to global noise sources. J. Geophys. Res.: Solid Earth, 123, 691–6921.
- Ermert, L., Sager, K., Afanasiev, M., Boehm, C., and Fichtner, A. (2017). Ambient seismic source inversion in a heterogeneous Earth: Theory and application to the Earth's hum. J. Geophys. Res.: Solid Earth, 122, 9184–9207.
- Sager, K., Ermert, L., Boehm, C., and A. Fichtner (2017), Towards Full Waveform Ambient Noise Inversion, Geophys. J. Int., 212(1), 566–590.
- Delaney, E., Ermert, L., Sager, K., Kritski, A., Bussat, S., and Fichtner, A. (2017). Passive seismic monitoring with nonstationary noise sources. Geophysics, 82(4), KS57–KS70.
- Fichtner, A., Ermert, L. and A. Gokhberg; Seismic Noise Correlation on Heterogeneous Supercomputers. Seismological Research Letters ; 88 (4): 1141–1145.
- Fichtner, A., L. Stehly, Ermert, L., and C. Boehm (2017), Generalized interferometry – I: Theory for interstation correlations, Geophys. J. Int., 208(2), 603.
- Ermert, L., A. Villaseñor, and A. Fichtner (2016), Cross-correlation imaging of ambient noise sources, Geophys. J. Int., 204(1), 347–364.
- Afanasiev, M., D. Peter, K. Sager, S. Simute, Ermert, L., L. Krischer, and A. Fichtner (2016), Foundations for a multiscale collaborative earth model, Geophys. J. Int., 204(1), 39.
- Poggi, V., Ermert, L., J. Burjánek, C. Michel, and D. Fäh (2015), Modal analysis of 2-d sedimentary basin from frequency domain decomposition of ambient vibration array recordings, Geophys. J. Int., 20 0(1), 615.
- Ermert, L., V. Poggi, J. Burjánek, and D. Fäh (2014), Fundamental and higher two-dimensional resonance modes of an alpine valley, Geophys. J. Int., 198(2), 795.

Peer-reviewed conference proceedings

- Fichtner, A., Afanasiev, M., Sager, K., Ermert, L., 2015. Multi-scale/multi-data inversion for elastic Earth structure - A concept. Conference on Computational Methods in Structural Dynamics and Earthquake Engineering 2015, 946-958.