

LEILA MIZRAHI

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Education

Postdoctoral Researcher	<i>Dec 2022-present</i>
ETH Zurich (Switzerland), Swiss Seismological Service	
PhD in Statistical Seismology	<i>Jul 2019-Nov 2022</i>
ETH Zurich (Switzerland), Swiss Seismological Service	
Visiting scholar at University of Southern California (Sep 2021-Jan 2022)	
PhD Thesis: " Towards Next Generation Time-Dependent Earthquake Forecasting "	
<i>Receiver of the ETH Medal for outstanding doctoral theses</i>	
MSc in Mathematics	<i>Feb 2014-Sep 2015</i>
University of Zurich (Switzerland)	
Master's Thesis: " Thoroughly Formalizing an Uncommon Construction of the Real Numbers "	
BSc in Mathematics	<i>Sep 2010-Feb 2014</i>
University of Zurich (Switzerland)	

Professional Experience

Actuary Methods & Processes (Assistant Vice President)	<i>Mar 2019-Jun 2019</i>
Swiss Re Ltd., Underwriting Strategy department, Zurich, Switzerland	
Underwriting Strategy Graduate (graduates@swissre program)	<i>Sep 2017-Feb 2019</i>
Swiss Re Ltd., Underwriting Strategy department, Zurich, Switzerland	
Modelling Intern	<i>Feb 2016-Jan 2017</i>
Swiss Re Ltd., Underwriting Strategy department, Zurich, Switzerland	

Other Relevant Experience

PhD Student Advisor	<i>Dec 2022-present</i>
Department of Earth Science, ETH Zurich (Switzerland)	
Students: Marta Han, Aron Mirwald	
Lecturer	<i>May-Jun 2022</i>
Department of Earth Science, ETH Zurich (Switzerland)	
Integrated Practical Course on Seismic Networks and Data	
Co-Convener	<i>Apr 2022 and 2023</i>
SSA Annual Meeting	
Session: New Methods and Models for More Informative Earthquake Forecasting (2023)	
Session: New Developments in Physics- and Statistics-based Earthquake Forecasting (2022)	
Reviewer	<i>Jun 2021-present</i>
Seismological Research Letters	
Earth and Planetary Science Letters	
Nature Communications Earth & Environment	
Geophysical Journal International	
IEEE Transactions on Geoscience and Remote Sensing	
Frontiers in Applied Mathematics and Statistics	
On-call Duty Seismologist	<i>Jun 2020-present</i>
Swiss Seismological Service, ETH Zurich (Switzerland)	
Communicate with Swiss authorities and with the public in case earthquakes in Switzerland or abroad.	

Teaching Assistant	Sep 2019-present
Department of Earth Science, ETH Zurich (Switzerland)	
Statistical Data Analysis with Matlab, Geophysical Field Course on Seismic Refraction	
Fieldwork	Jun 2021
Hengill geothermal area (Iceland), Swiss Seismological Service & Reykjavik Energy	
Assisted with the installation of a 500 node seismic array.	
Fieldwork	Aug 2020
Hengill geothermal area (Iceland), Swiss Seismological Service & ISOR Icelandic Geosurvey	
Assisted with the installation and dismantling of broadband seismic stations, including wind turbines and solar panels.	
Teaching Assistant	Sep 2013-Sep 2015
Institute of Mathematics, University of Zurich (Switzerland)	
Analysis I&II, Number Theory, Logic and Set Theory	

Publications

Articles

1. **Mizrahi, L.**, and Jozinović, D., 2024. Modeling the Asymptotic Behavior of Higher-Order Aftershocks with Deep Learning. *arXiv preprint*. [0.48550/arXiv.2401.06075](https://arxiv.org/abs/2401.06075)
2. Han, M., **Mizrahi, L.**, and Wiemer, S., 2024. Towards a Harmonized Operational Earthquake Forecasting Model for Europe. *EGUsphere preprint*. [student supervision of Marta Han] [10.5194/egusphere-2023-3153](https://doi.org/10.5194/egusphere-2023-3153)
3. Ritz, V.A., **Mizrahi, L.**, Clasen Repollés, V., Rinaldi, A.P., Hjörleifsdóttir, V. and Wiemer, S., 2023. Pseudo-prospective forecasting of induced and natural seismicity in the Hengill geothermal field. *ESS Open Archive preprint*. [10.22541/essoar.168500354.49240043/v1](https://doi.org/10.22541/essoar.168500354.49240043/v1)
4. **Mizrahi, L.**, Nandan, S., Savran, W., Wiemer, S. and Ben-Zion, Y., 2023. Question-Driven Ensembles of Flexible ETAS Models. *Seismological Research Letters*. doi.org/10.1785/0220220230
5. **Mizrahi, L.**, Nandan, S. and Wiemer, S., 2021. Embracing Data Incompleteness for Better Earthquake Forecasting. *Journal of Geophysical Research: Solid Earth*. doi.org/10.1029/2021JB022379
6. **Mizrahi, L.**, Nandan, S. and Wiemer, S., 2021. The Effect of Declustering on the Size Distribution of Mainshocks. *Seismological Research Letters*. doi.org/10.1785/0220200231

Code Repositories

1. **Mizrahi, L.** and Schmid, N. and Han, M., 2023. Imizrahi/etas (3.2). *Zenodo*. doi.org/10.5281/zenodo.6583992

Selected Conference Presentations

1. **Mizrahi, L.**, Dallo, I. and Kuratle, L.D., 2023. Developing, testing and communicating earthquake forecasts: an expert elicitation. *Invited Talk*, IUGG Berlin General Assembly, July 12-19 2023, Berlin, Germany
2. **Mizrahi, L.**, Nandan, S., Danciu, L. and Wiemer, S., 2022. Calibration of ETAS-based operational earthquake forecasting models: A simple recipe applied to Switzerland. *Talk*, 3rd European Conference for Earthquake Engineering and Seismology, September 5-9 2022, Bucharest, Romania
3. **Mizrahi, L.**, Nandan, S. Savran, W., Wiemer, S. and Ben-Zion, Y., 2022. Relaxing ETAS's Assumptions to Better Capture the Real Behavior of Seismicity. *Talk*, EGU General Assembly, May 23-27 2022, Vienna, Austria

4. **Mizrahi, L.**, Nandan, S. and Wiemer, S., 2021. Joint resolving of the fault plane ambiguity and anisotropic earthquake triggering in Southern California. *Poster*, AGU Fall Meeting, December 13-17 2021, New Orleans, LA
5. **Mizrahi, L.**, Nandan, S. and Wiemer, S., 2021. The Role of HPC in the Search of Next-Generation Earthquake Forecasting Models. *Talk*, Platform for Advanced Scientific Computing (PASC) Conference, July 5-9 2021, Geneva (Switzerland)
6. **Mizrahi, L.**, Nandan, S. and Wiemer, S., 2021. Embracing Data Incompleteness for Better Earthquake Forecasting. *Talk*, SSA Annual Meeting, April 19-23 2021, online
Receiver of 2021 Student Presentation Award
7. **Mizrahi, L.**, Nandan, S. and Wiemer, S., 2020. The Effect of Declustering on the Size Distribution of Mainshocks. *Talk*, Swiss Geoscience Meeting, November 6-7 2020, online

Technical Skills

Sorted from most to least recently used

Python (pandas, numpy, matplotlib, scikit-learn, keras, PySpark, etc.), **Git** (GitLab, GitHub: [lmizrahi](#)), **COMP Superscalar** (pycompss), **distributed high performance computing** (using LSF workload management platform), **UNIX shell**, **LaTeX** (Overleaf), **Microsoft Excel**, **Matlab**, **JavaScript** (Observable, D3, AngularJS), **SQL**, **MongoDB**

Languages

German (native), **English** (fluent), **French** (advanced), **Spanish** (basic), **Hebrew** (beginner)