

Itzhak Lior CV

PhD in Earthquake Seismology

Senior lecturer, The Hebrew University of Jerusalem, Israel

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Appointments

- 2021- **Senior Lecturer**, The Institute of Earth Sciences, The Hebrew University of Jerusalem, Israel.
- 2019-2021 **Post-Doctoral Fellowship (Seismology)**, Géoazur, Université Côte d'Azur, France.
Université Côte d'Azur: "Individual Grants for Young Researchers" fellow.
Hosts: Prof. Jean-Paul Ampuero, Dr. Anthony Sladen, Dr. Diane Rivet.
Project: "Sea Bottom Fiber-Optic Observations of Seismic Signals".

Education

- 2015-2019 **PhD (Seismology)**, Tel-Aviv University, Israel.
Advisor: Prof. Alon Ziv.
Dissertation: "Seismic Ground Motion: Theoretical Predictions versus Observations".
- 2013-2015 **MSc (Seismology)**, Tel-Aviv University, Israel.
Advisor: Prof. Alon Ziv.
Dissertation: "P-wave Attenuation with Implications for Earthquake Early Warning".
Graduated summa cum laude.
- 2010-2013 **BSc (Physics and Geology)**, The Hebrew University, Jerusalem, Israel.

Research interests

Source parameter inversion ♦ Ground motion prediction (GMPE)
Theoretical source and ground motion models ♦ Earthquake Early Warning (EEW)
Distributed Acoustic Sensing (DAS) ♦ Seismic noise analysis ♦ Seismic imaging

Publications

1. **Lior, I.**, A. Sladen, D. Mercerat, J. P. Ampuero, D. Rivet, and S. Sambolian (2021). Strain to ground motion conversion of distributed acoustic sensing data for earthquake magnitude and stress drop determination, *Solid Earth*, **12**, 1421-1442, doi: 10.5194/se-12-1421-2021.
2. **Lior, I.**, A. Sladen, D. Rivet, J. P. Ampuero, Y. Hello, C. Becerril, H. F. Martins, P. Lamare, C. Jestin, S. Tsagkli, and C. Markou (2021). On the Detection Capabilities of Underwater Distributed Acoustic Sensing, *Journal of Geophysical Research: Solid Earth*, **126**(3), doi: 10.1029/2020JB020925.

3. Nof, R. N., **I. Lior**, and I. Kurzon (2021). Earthquake Early Warning System in Israel—Towards an Operational Stage, *Frontiers in Earth Science*, **9**, doi: 10.3389/feart.2021.684421.
4. **Lior, I.**, and A. Ziv (2020). Generic Source Parameter Determination and Ground-Motion Prediction for Earthquake Early Warning, *Bulletin of the Seismological Society of America*, **110**, 345-356, doi: 10.1785/0120190140.
5. **Lior, I.**, and A. Ziv (2018). The Relation between Ground Motion, Earthquake Source Parameters and Attenuation: Implications for Source Parameter Inversion and Ground Motion Prediction Equations, *Journal of Geophysical Research: Solid Earth*, **123**, 5886–5901, doi: 10.1029/2018JB015504.
6. **Lior, I.**, and A. Ziv (2018). Reply to “Comment on ‘The Relation between Ground Acceleration and Earthquake Source Parameters: Theory and Observations’ by Itzhak Lior and Alon Ziv” by J. Enrique Luco, *Bulletin of the Seismological Society of America*, **108**, 3698-3698, doi: 10.1785/0120180263.
7. **Lior, I.**, and A. Ziv (2017). The Relation Between Ground Acceleration and Earthquake Source Parameters: Theory and Observations, *Bulletin of the Seismological Society of America*, **107**, 1012-1018, doi: 10.1785/0120160251.
8. Ziv, A., and **I. Lior** (2016). Real-Time Moment Magnitude and Stress Drop with Implications for Real-Time Shaking Prediction, *Bulletin of the Seismological Society of America*, **106**, 2459-2468, doi: 10.1785/0120160091.
9. **Lior, I.**, A. Ziv, and R. Madariaga (2016). P-Wave Attenuation with Implications for Earthquake Early Warning, *Bulletin of the Seismological Society of America*, **106**, 13-22, doi: 10.1785/0120150087.

Prizes and awards

- ◆ **2020:** Université Côte d'Azur: Individual Grants for Young Researchers.
- ◆ **2017:** BSF: Prof. Rahamimoff Travel Grants Program for Young Scientists.
- ◆ **2017:** Tel-Aviv University: Dr. Rafael Katzman award of excellence.
- ◆ **2014:** Tel-Aviv University: Prof. Dan Leventhal award of excellence.

Participation in Scientific Conferences, Lectures, and Other Activity

- ◆ **Lior, I.**, A. Sladen, D. Rivet and J. P. Ampuero, *Japan Geophysical Union General Assembly*. “On the Detection Capabilities of Underwater DAS”, **Invited talk**, 06/2021
- ◆ **Lior, I.** *DAS RCN IRIS Webinar series*. “Distributed Acoustic Sensing at the Ocean-Bottom”, **Invited talk**, 04/2021 (<https://youtu.be/AoPVxUCgsZQ>)
- ◆ **Lior, I.**, A. Sladen, D. Mercerat, J. P. Ampuero, D. Rivet, and S. Sambolian, *EGU General Assembly*, “Strain to Ground Motion Conversion of DAS Data for Earthquake Magnitude and Stress Drop Determination”, 04/2021
- ◆ **Lior, I.**, A. Sladen, D. Rivet and J. P. Ampuero, *Marine Seismology Symposium*. “On the Detection Capabilities of Underwater DAS”, **Invited talk**, 03/2021
- ◆ **Lior, I.**, A. Sladen, D. Rivet and J. P. Ampuero, *AGU General Assembly*. “On the Detection Capabilities of Underwater DAS”, poster, 12/2020.
- ◆ **Lior, I.**, *DAS Marine Geophysics Working Group meeting*. “On The Detection Capabilities of Underwater DAS”, **Invited talk**, 11/2020 (<https://drive.google.com/file/d/13lgYHjvdY9tywBrFAfzahUKDDJRd2QIK/view?usp=sharing>).

- ◆ **Lior, I.**, *The Institute of Earth Sciences seminar, The Hebrew University, Jerusalem, Israel*. "Distributed Acoustic Sensing on Seafloor Telecommunication Cables: New Opportunities for Earthquake Monitoring and Seismic Imaging", oral, 10/2020 (<https://huji.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?tid=a8784dca-4d56-4c14-af7a-ac6200e3cbd5>).
- ◆ **Lior, I.**, *The Institute of Earth Sciences seminar, The Hebrew University, Jerusalem, Israel*. "The Relation Between Ground Motion and Earthquake Source Parameters: Implications for Source Parameter Inversion, Ground Motion Prediction and Earthquake Early Warning.", 06/2020 (https://drive.google.com/file/d/1xtDhfMOM4YdhVjcWVnVbOu_EgNTNI4N9/view?usp=sharing).
- ◆ **Lior, I.**, A. Sladen, D. Rivet, J. P. Ampuero, *Géoazur seminar, France*. "Detection Capabilities of Underwater Distributed Acoustic Sensing", 06/2020 (https://drive.google.com/file/d/1vhvwt5qCHDAfpZyzpDi_1jCliExHye7q/view?usp=sharing).
- ◆ **Lior, I.**, D. Mata, G. Guerin, D. Rivet, A. Sladen, J. P. Ampuero, *EGU 2020, online*. "Automatic Earthquake Detection and De-noising for Distributed Acoustic Sensing: Examples from On-land and Underwater Fibers", **highlight talk**, 05/2020.
- ◆ **Lior, I.**, and A. Ziv, *EGU 2020, online*. "Generic Source Parameter Determination for Earthquake Early Warning: Theory, Observations and Implications for the Mw 7.1 Ridgecrest Earthquake", oral, 05/2020.
- ◆ **Lior, I.**, *Géoazur seminar, France*. "The Relation Between Ground Motion and Earthquake Source Parameters: Implications for Source Parameter Inversion, Ground Motion Prediction and Earthquake Early Warning.", 11/2019.
- ◆ **Lior, I.**, and A. Ziv, *Azerbaijan-Israel Workshop on Earthquake Seismology and Geodynamics, Jerusalem, Israel*. "The Relation Between Ground Motion, Earthquake Source Parameters and Attenuation: Implications for Ground Motion Prediction", oral, 10/2018.
- ◆ **Lior, I.**, and A. Ziv, *International School of Physics "Enrico Fermi", Mechanics of Earthquake Faulting Course, Varrena, Italy*. "The Relation between Ground Motion, Earthquake Source Parameters and Attenuation: Implications for Source Parameter Inversion", oral, 07/2018.
- ◆ **Lior, I.**, and A. Ziv, *Scripps special Seminar, UC-San Diego, Scripps, California*. "A New Approach for Source Parameter Inversion", oral, 11/2017.
- ◆ **Lior, I.**, and A. Ziv, *Seismology Lab Earthquake of the Week Seminar, UC-Berkeley, California*. "A New Approach for Source Parameter Inversion", oral, 10/2017.
- ◆ **Lior, I.**, and A. Ziv, *Stanford special Seminar, Stanford University, California*. "A New Approach for Source Parameter Inversion", oral, 10/2017.
- ◆ **Lior, I.**, and A. Ziv, *USGS Earthquake Science Center Seminars, USGS Menlo Park, California*. "A New Approach for Source Parameter Inversion", oral, 10/2017 (<https://earthquake.usgs.gov/contactus/menlo/seminars/1109>).
- ◆ **Lior, I.**, and A. Ziv, *Geophysics Group Weekly Colloquium, Tel Aviv University, Israel*. "A New Time-Domain Approach for Source Parameter Inversion", oral, 06/2017.

- ◆ **Lior, I.**, and A. Ziv, *EGU General Assembly, Vienna, Austria*. "The relation between ground acceleration and earthquake source parameters: theory and observations", poster, 04/2017.
- ◆ **Lior, I.**, and A. Ziv, *Symposium on Earthquake Seismology, Tel Aviv University, Israel*. "Relationships between ground motions and earthquake source parameters", oral, 12/2016.
- ◆ **Lior, I.**, A. Ziv, and R. Madariaga, *Symposium on Earthquake Early Warning, Tel Aviv University, Israel*. "Attenuation of P-Waves for Earthquake Early Warning", oral, 03/2016.
- ◆ **Lior, I.**, A. Ziv, and R. Madariaga, *Earthquake and Induced Multi-Risk Early Warning and Rapid Response, ECGS & ESC/EAGE Joint Workshop, Luxemburg*. "P-wave Attenuation with Implications for Earthquake Early Warning", oral, 11/2015.
- ◆ **Lior, I.**, A. Ziv, and R. Madariaga, *UCB-TAU Workshop on Earthquake Early Warning, UC-Berkeley, California*. "P-wave Attenuation with Implications for Earthquake Early Warning", oral, 10/2015.
- ◆ **Lior, I.**, A. Ziv, and R. Madariaga, *Earthquake Research Seminar, National Steering Committee for Earthquake Preparedness, Tel-Aviv, Israel*. "Towards attenuation law for Israel", oral, 09/2015.
- ◆ **Lior, I.**, and A. Ziv, *TAU Seismology Group Research Presentations for the GII, Geophysical Institute of Israel, Israel*. "Physical Based GMPE", oral, 05/2014.
- ◆ **Lior, I.**, and A. Ziv, *Geophysics Group Weekly Colloquium, Tel Aviv University, Israel*. "Physical Based GMPE", oral, 05/2014.