INGV-BSL Meeting Program

Tuesday May 13, 2025 - Seaborg Room, Men's Faculty Club, UC Berkeley

8:00 Coffee and Pastries - Seaborg Room, Men's Faculty Club, UC Berkeley

8:50 Welcome: Richard Allen and Luca Malagnini

Session 1: Active fault systems of interest

Convenors: Stefano Pucci (stefano.pucci@ingv.it)**, Roland Bürgmann** (burgmann@berkeley.edu)

9:00 The Role of Seismic Attenuation in Revealing and Characterizing Crustal Structure and Properties - **Gabrielli, S., Akinci, A., Zhou, Y., Del Pezzo, E., De Siena, L.**

9:40 Probing Fault Rheological Properties Along the Central San Andreas Fault With Tidal and Hydrological Earthquake Modulation - **Roland Bürgmann, Lian Xue, Zeyan Zhao**

10:20 Break

10:40 Lightning session: 2 slides in 2 min introduction of posters in Session 1 (please send lightening session slides to Roland Bürgmann prior to meeting (burgmann@berkeley.edu)

11:00 The complexity of active and seismogenic faulting: time for a paradigm change - **Gianluca Valensise, Pierfrancesco Burrato, Umberto Fracassi & Paola Vannoli**

11:20 Revisiting an Enigma on California's North Coast: the Seismotectonics of the M6.5 Fickle Hill Earthquake of December 1954 - **Margaret Hellweg, Thomas A. Lee, Douglas S. Dreger, Anthony Lomax, Lijam Hagos, Hamid Haddadi, Robert McPherson, Lori Dengler, Susan Hough**

12:00-13:00 Lunch

Session 2: Late-stage faults – monitoring, observations, and modeling

Convenors: Licia Faenza (licia.faenza@ingv.it)**, Richard Allen** (rallen@berkeley.edu)

1:00 Real-Time Monitoring Through Passive Seismic Interferometry: Feasibility and Limitations from the 2024 Greek Seismic Swarm Case Study - **E. Mandler, L. Zaccarelli, L. Faenza, N. Melis**

1:20 Tracking Fracture Evolution with Distributed Acoustic Sensing and Permanent Seismic Sources - **Julia Correa**

1:40 Truaa – three years of operational experience with Israel's earthquake early warning system - **Ran Novitsky Nof, Lewis Schardong, Andrey Polozov, Hila Navon, Marina Gorstein, Veronic Avirav, Nadav Wetzler, Ittai Kurzon**

2:00 Break

2:30 Lightning poster talks: 2 slides and 2 mins each - please send lighting poster talks to Richard Allen prior to the meeting(rallen@berkeley.edu)

2:40 Improvements in real-time earthquake epicenter estimates using prior seismicity - **Amy Williamson, Angela Lux, Richard Allen, Ivan Henson, Andrei Akimov**

3:00 Advancing Seismic Monitoring: Evaluating Deep-Learning Versus Manual Arrival-Time Picks for Earthquake Relocation and Tomographic Analysis - **S. Cianetti, A. Lomax, M. Michelini, C. Giunchi**

3:20 Ground Motion Observations from the MyShake Smartphone Network and Future Directions - **Savvas Marcou, Richard Allen**

3:40 Break

4:00 **Discussion: Fault Observatories: Current capabilities and future needs - Richard Allen**

Wednesday May 14, 2025 - Seaborg Room, Men's Faculty Club, UC Berkeley

8:00 Coffee and Pastries - Seaborg Room, Men's Faculty Club, UC Berkeley

Session 3: Source physics, modeling and ground motions:

Convenors: Luca Malagnini (luca.malagnini@ingv.it)**, Taka'aki Taira** (taira@berkeley.edu), **Douglas Dreger** (ddreger@berkeley.edu)**,**

9:00 Evaluating the relationship between slip and slip-velocity on large-magnitude ruptures based on surface displacement - **Camilo I. Pinilla Ramos and Norman A. Abrahamson**

9:20 Isotropic Moment Associated with Formation of Natural Explosion Structures - **Lung S Chan , Walter Alvarez, and Luca Malagnini**

9:40 Fracture Characterization and Stress Changes Revealed by Induced Seismicity Analysis at the Cape Modern Geothermal Field, Utah - **Nori Nakata**

10:00 Beyond -1 Geometric Spreading in the Near-Field: Insights from Theory and Simulation - **Savvas Marcou and Douglas Dreger**

10:20 Break

10:40 **Session 3 Lightning talk session:** 2 slides in 2 min introduction of posters in please send slides to Taka'aki Taira prior to the meeting (taira@berkeley.edu)

11:00 Waveform Tomography for Improved Ground Motion Simulations in California and the Western US - **Arthur Rodgers**
11:20 TBD - **Annemarie Baltay**
11:40 Finite-source scaling of the 2019 Ridgecrest, California sequence - **Douglas Dreger**

12:00-13:00 Lunch

Session 4: BSL-INGV collaborations

Convenors: Raffaele Azzaro (raffaele.azzaro@ingv.it)**, Weiqiang Zhu** (zhuwq@berkeley.edu)

1:00 How Seismic Attenuation Reveals Fluid Dynamics: Analysis of the 2016 Earthquake Sequence of the Central Apennines (Italy) - **Luca Malagnini, Francesco Pio Lucente, Irene Munafò and Douglas S. Dreger**
1:25 Active Faulting Processes Across Volcanic Settings: A Comparative Investigation of Mt. Etna and Kīlauea - **Azzaro R., Bürgmann R., Brooks S.J., Guglielmino F., Rong B., Sparacino F.**
1:50 Bayesian Reconstruction of active fault Information from Deformed geological markers and GEodesy (BRIDGE) - **N. Parrino, S. Minson, P. Burrato, R. Bürgmann**

2:15 Break

2:35 Lightning poster talks: 2 slides and 2 mins each, please send lighting poster talks to Weiqiang Zhu prior to the meeting(zhuwq@berkeley.edu)
2:45 Directional amplification across the San Jacinto and Hayward fault zones, CA - Marta Pischiutta, **Lawrence M. Baker, Jon B. Fletcher, Francesco Salvini, Antonio Rovelli and Yehuda Ben-Zion**
3:10 TBD
3:35 Machine learning applications in California and Italy: Insights from datasets, models, and catalogs. **Zhu W., Wang H., Rong B., Tan YJ, Münchmeyer J., Beroza G.**

4pm: Poster session and reception (in McCone Hall)

Session 1 Posters - please send your 2 slide lightening talk to Roland Burgmann (burgmann@berkeley.edu) prior to the meeting

- InSAR Analysis on Mt. Etna: Preliminary Insights into the Mid-Term Active Faulting Dynamics - **Azzaro R., Brooks S.J. , Guglielmino F. , Sparacino F.**
- Multiannual Creep Rate Changes Along the Hayward Fault - **Danielle Lindsay, Roland Burgmann**
- Fractured Gorda plate with abundant conjugate faulting in the Mendocino Triple Junction - **Bo Rong, Weiqiang Zhu, Roland Bürgmann**
- Influence of mechanical anisotropy on coseismic fault damage evolution over multiple earthquake cycles - **Zachary Smith, Roland Bürgmann, W. Ashley Griffith, Johanna Nevitt, Francis Waligora, Ruyu Yan**

- Seismic Imaging of Shallow Crustal Structure in Northern California Using Ambient-noise-derived Rayleigh Wave Ellipticity and Receiver Functions - **Gabriela Zaldívar Andrade, HyeJeong Kim, Fan-Chi Lin, Taka'aki Taira**

Session 2 Posters - please send your 2 slide lightening talk to Richard Allen (rallen@berkeley.edu) prior to the meeting

- Deep Learning Python-Based Workflow for Automated Focal Mechanism Determination of Small to Moderate Earthquakes in Italy - **F. Tavani, P. Artale Harris, L. Scognamiglio, M.-A.Meier**
- Real-time Testing of DAS-based Earthquake Early Warning in Northern California: Design and Implementation - **Yuancong Gou, Ran Nof, Richard Allen, Ivan Henson, Angela Lux, Brian Pardini, Weiqiang Zhu, Taka'aki Taira, Julien Marty**
- Toward Scalable Building Health Monitoring with MyShake - **Utpal Kumar, Richard Allen**
- Monitoring of Stress Changes using Direct and Coda Wave Velocity Measurements in Faulted and Intact Granite Samples - **Kiran Pandey, Taka'aki Taira, Georg Dresen, Thomas H. Goebel**
- High-resolution seismicity and ground motion variability across the highly locked southern Anninghe fault with dense seismic arrays and machine learning techniques - **Junhao Song, Hongfeng Yang, Huajian Yao**

Session 3 Posters - please send your 2 slide lightening talk to Taka'aki Taira (taira@berkeley.edu) prior to the meeting

- Two Paths, One Insight: Comparing Moment Tensor and Savage–Wood Radiation Efficiency to Constrain Seismic Source Properties - **Giovanna Calderoni, Michela Ponte, Mario La Rocca, and Rita Di Giovambattista**
- Source Characterizations of Northern California Earthquakes through Moment Rate Function Properties - **Taka'aki Taira and Doug Dreger**

Session 4 Posters - please send your 2 slide lightening talk to Weiqiang Zhu (zhuwq@berkeley.edu) prior to the meeting

- Geophysical investigations in fault zones - **Fabio Villani, Vincenzo Sapia, Marta Pischiutta, Valerio Materni, Valentina Romano**
- Towards a Quasi Real-Time Monitoring of Seismic Sensor Performance through Machine Learning - **Sylvester Seo, Shravan Balaji, Taka'aki Taira**
- Accuracy and Precision of Earthquake Location Programs: Insights from a Synthetic Controlled Experiment based on 2019 Ridgecrest Earthquake Sequence **Y Yu, WL Ellsworth, GC Beroza**

Thursday 8:30AM May 15, 2025 - Field Trip Meeting Place: McCone Hall West Entrance

We will leave promptly at 9am. Boxed lunch will be provided. Participants should dress for weather conditions; it is best to wear layers as there can be a large variation in temperature at the several stops we will visit. Comfortable shoes, a hat, and sunscreen are recommended.