



SCIENCE OF SLOW-TO-FAST EARTHQUAKES

**International Joint Workshop on
Slow-to-Fast Earthquakes 2024, Mexico
26-27 Feb. 2024, Mexico City, Mexico**

International Joint Workshop on Slow-to-Fast Earthquakes 2024 in Mexico

Date: Feb. 26 (Mon.) – 27 (Tue.) 2024

Venue: Seminars Unit "Dr. Ignacio Chávez", UNAM, Mexico City

Language: English

Optional Field Trips: Feb. 28 (Wed.) at Xitle volcano, Cuicuilco archeological site and CENAPRED
Feb. 29 (Thu.) at Popocatépetl volcano

Important Dates:

Registration and Abstract Submission / Jan. 14

See Details on Web

<https://slow-to-fast-eq.org/>

Organizers: Science of Slow-to-Fast Earthquakes

School of Engineering and Geophysics Institute, UNAM



SCIENCE OF SLOW-TO-FAST EARTHQUAKES



geofisica
UNAM

Popocatépetl volcano



"The Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan under its 'The Second Earthquake and Volcano Hazards Observation and Research' Program (Earthquake and Volcano Hazard Reduction Research)"



PRELIMINARY PROGRAM
Monday, 26th February 2024
1st Block

8:30-9:00 hrs	Opening
9:00-9:30 hrs	Víctor Manuel Cruz Atienza (UNAM) "Seismogenesis in a Long-Feared Gap: A Sway of Slow and Fast Slip"
9:30-9:45 hrs	Naofumi Aso (UTokyo) "LFEs in the San Andreas fault system"
9:45-10:00 hrs	Ketzallina Flores (DPRI, KU) "Identification of possible tsunami earthquakes along the Mexican Subduction Zone"
10:00-10:15 hrs	Mathieu Perton (UNAM) "DAS technique as a fantastic tool to monitor small seismicity and subsoil imaging"

10:15-10:30 hrs Break

2nd Block

10:30-11:00 hrs	Satoshi Ide (UTokyo) "A method to monitor slow earthquakes in Mexico"
11:00-11:30 hrs	Vladimir Kostoglodov (UNAM) "On a strategy for seismic risk mitigation in Mexico"
11:30-11:45 hrs	Tatsuhiko Saito (NIED) "Strain energy accumulation and release: earthquakes and creep"
11:45-12:00 hrs	Makoto Otsubo (GSJ) "Role of folds that develop near plate boundaries as inelastic deformation"

12:00-12:10 hrs Break

3rd Block

12:10-12:40 hrs	Tomoaki Nishikawa (DPRI, KU) "Comparison of statistical seismicity models of low-frequency earthquakes (LFEs) and its implications for the mechanisms governing LFE activity"
12:40-12:55 hrs	Raymundo Plata-Martinez (UNAM) <i>Title pending</i>
12:55-13:10 hrs	Takanori Matsuzawa (NIED) "Tremor activity in April, 1988, using the analog seismograms of the Kanto-Tokai Observation Network"
13:10-13:25 hrs	Luis Antonio Domínguez (UNAM) "Estimating Slip Rates in Subduction Zones: A 21-Year Study of Repeater Earthquakes"
13:25-13:40 hrs	Suguru Yabe (GSJ) "Synthetic evaluation of constraint on non-double couple component in CMT analysis & application to real data"

13:40-13:55 hrs	Miguel Ángel Santoyo (UNAM) "Reservoir water loads and earthquake stress interactions: Analysis for the Pirrís reservoir in Costa Rica and possible application to the Mexican Subduction Zone"
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14:00-16:00 hrs Lunchtime

4th Block

16:00-18:00 hrs	Posters session
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19:00-21:00 hrs Dinner

Tuesday, 27th February 2024

5th Block

8:30-9:00 hrs	Yoshihiro Kaneko (KU) "Strong asymmetry in near-fault ground velocities during a strike-slip earthquake revealed by waveform particle motions and dynamic rupture simulations"
9:00-9:30 hrs	Carlos Villafuerte (UNAM) "Unveiling the spectrum of slip behavior: A mechanical insight into the continuous chatter of a fault volume"
9:30-9:45 hrs	Kurama Ohkubo (NIED) "Source mechanism of gouge-mediated foreshocks through the 4-meter-long biaxial rock friction experiments"
9:45-10:00 hrs	Josué Tago (UNAM) "3D implementation of rate and state friction laws in a discontinuous Galerkin method"

10:00-10:15 hrs Break

6th Block

10:15-10:45 hrs	Francisco J. Sánchez Sesma (UNAM) "Detailed Characterization of the Terrain for Seismic Microzoning and Risk Reduction"
10:45-11:00 hrs	Andrés Christen (CIMAT) "Bayesian Estimation of Fault Slip Distribution for Slow Slip Events"
11:00-11:15 hrs	Akemi Noda (Meteorological Research Institute) "Mechanical coupling inversion and its implications for earthquake and slow-slip generation mechanisms"
11:15-11:30 hrs	Keisuke Ariyoshi (JAMSTEC) "Physical interpretation of slow earthquake migration process based on a friction law"
11:30-12:00 hrs	Nelson Pulido (NIED) "National Research Institute for Earth Science and Disaster Resilience, Japan "

12:00-12:15 hrs Break

7th Block

12:15-12:30 hrs	Denis Legrand (UNAM) "From Very Long Period slow ground displacement to high frequency signals recorded before, during and after an explosion at Stromboli volcano, Italy"
12:30-12:45 hrs	Mathieu Haney (USGS) "Monochromatic Long-Period Seismicity Prior to the 2012 Earthquake Swarm at Little Sitkin Volcano, Alaska"
12:45-13:00 hrs	Shri Krishna Singh (UNAM) "Repeating Large, Subduction Thrust Earthquakes in Oaxaca, Mexico: Some Implications"
13:00-13:30 hrs	Arturo Iglesias (UNAM) "Evidences of source directivity for two earthquakes in Mexico (Sep 08, 2021, Mw=7.1, and Sep 19, 2022, Mw=7.6)"
13:30-13:45 hrs	Manuel J. Aguilar Velázquez (UNAM) "Seismic response variations in the Valley of Mexico"
13:45-14:00 hrs	Gerardo Suárez (UNAM) <i>Title pending</i>

14:00-16:00 hrs Lunchtime

8th Block

16:00-16:30 hrs	Yoshihiro Ito (DPRI, KU) "Multi-disciplinary earthquake science in Mexico"
16:30-17:00 hrs	Genta Nakano (DPRI, KU) <i>Title pending</i>
17:00-17:30 hrs	Patricia Jácome Paz (UNAM) <i>Title pending</i>
17:30-18:00 hrs	General Discussion and Closing

POSTERS PRESENTATIONS

Name	Poster Title
Akane Yamaoto (Nihon Univ)	Magmatism and high pressure fluid beneath rifting valley in the Eurasian continental margin from earthquake focal mechanisms
Alejandro Reyes Romero (Instituto de Geofísica)	Characterization of the activity at the Popocatépetl volcano by its seismic signals.
Alfonso Ortiz Avila (UNAM)	Data Augmentation techniques to improve automatic classification in DAS-type seismic records.
Alonso Bernal Trejo (Instituto de Ingeniería)	Evaluación de la respuesta humana ante vibraciones
Angela Meneses-Gutierrez (NIED)	Elucidating the mechanism driving postseismic deformation of inland earthquakes
Brenda Lazaro Bosques (Institute of Engineering)	Evaluation of the human exposition to vibrations
Daniel Corona-Fernandez (UNAM, Aspentech)	Source analysis of some large ($M > 6.3$) historical earthquakes occurred in Mexico during 1928
Dayna Zuñiga (Instituto de Ingeniería)	Application of the DAS technique for the seismic design of structures.
Erika Moreno (Kobe University)	Visco-elasto-plastic 2D subduction models in the presence of a high-density rigid continental block: a case study for the slab geometry beneath Kii Peninsula
Gabriela Alvarado (Postgraduate School in Earth Sciences, UNAM. Mexico)	Relation between surface seasonal gps ground displacements recordings and shallow underground water accumulation by rainfall time evolution: analysis at two sites close to gps slow-slip events recordings in Mexico.
Hector Gonzalez-Huizar (CICESE)	Potential observations of dynamically triggered earthquakes and tremor in Baja California, Mexico
Hinako Hosono (Geological Survey of Japan, AIST)	Estimate paleo-permeability around the fault by analyzing structural observations of cracks and mineral veins
Isaías Bañales (CIMAT)	Modelling Evolutionary Power Spectral Density Function of Strong Earthquakes Via Copulas
Juan M Gómez-González	QSN: A brand new Seismic Network at Central Mexico

(Centro de Geociencias)	
Kentaro Kuniyoshi (Kyoto Univ)	Slow and fast seismic activity in the southeastern Guerrero seismic gap
Kevin Vargas (Instituto de Ingeniería)	Physical-driven feature engineering for deep learning applications in seismo-volcanic signal analysis.
Manuel J. Aguilar-Velázquez (Posgrado en Ciencias de la Tierra, UNAM)	Seismic response variations in the Valley of Mexico
Martín Cárdenas-Soto (UNAM)	<i>Title pending</i>
Naofumi Aso (Tokyo Univ. of Science)	LFES in the San Andreas fault system
Omar Chávez (Instituto de Geofísica de la UNAM)	Determination of Cortical Thickness in Chiapas and Oaxaca Using the Converted Sp Phase
Raul Castro (CICESE)	The role of a slow-slip foreshock and the crustal fluid flow during the 2009 l'aquila, central italy, seismic sequence
Raul Valenzuela (Instituto de Geofísica, UNAM)	Shear Wave Splitting and Upper Mantle Flow in the Mexican Subduction Zone: New Results
Roberto Ortega (CICESE)	Machine Learning-Based Estimation of Seasonal Velocity Fluctuations in the Valley of Mexico
Satoru Baba (JAMSTEC)	Shallow slow earthquake observation using distributed acoustic sensing off the Cape Muroto, southwest Japan
Towako Aoyama (ERI, U. Tokyo)	Tremor in the Hikurangi margin
Valente Ramos Avila (UNAM)	Ambient noise tomography in the southern region of Mexico City by joint inversion of multimodal dispersion curves and HV
Yanhan Chen (Kyoto University)	New insight of low frequency earthquakes (LFES) in continuous ocean bottom seismometers at the Guerrero Seismic Gap, Mexico

ATTENDEES INFORMATION

We are glad to have you contribute to our upcoming scientific meeting. To ensure a smooth and productive workshop, please take note of the following instructions:

Oral Presentations:

- **Title and Abstract Update:** Please update your title and abstract, before the deadline 19 Feb. 2024, using the template file attached. Kindly do this via the link: <https://forms.gle/XgBBrL5KK8MNmmxb8>
- **Duration:** Oral presentations will be either 30 or 15 minutes, including the presentation and the subsequent Q&A session.
- **30-Minute Talks:** Your talk will be 25 minutes long, followed by a 5-minute session for Q&A. Notifications during the presentation will be given at 20, 25, and 30 minutes.
- **15-Minute Talks:** Your presentation will last 12 minutes, allowing for a 3-minute Q&A session. Notifications will be at 6, 12, and 15 minutes.
- **Presentation File Upload:** Please upload your presentation file before the deadline, 25 Feb. 2024, via the following link: <https://forms.gle/2rRh9X7b3sV1H33f9>

Poster Presentations:

- **Title and Abstract Update:** Please update your title and abstract, before the deadline 19 Feb. 2024, using the template file attached. Kindly do this via the link: <https://forms.gle/XgBBrL5KK8MNmmxb8>
- **Poster Dimensions:** Poster length of 90 cm and height of 150 cm.
- **Printing not available:** On-site printing will not be available.
- **Poster setup:** Please arrive a few minutes early on the first day to set up your poster in the poster area. Assistance and materials will be provided.
- **Poster Presentation:** Ensure your presence at your poster during the dedicated poster core time.
- **Poster Retrieval:** Kindly recover your poster promptly at the end of the workshop. Any posters left behind will be disposed of.

We appreciate your cooperation in adhering to these guidelines. Your efforts contribute to the success of the workshop.