

# **GEM CONFERENCE**

**FROM FAULTS TO FUTURE SCENARIOS**

June 23 - 25, 2026

University of Zagreb, Croatia

# **DAILY AGENDA**

[www.globalquakemodel.org](http://www.globalquakemodel.org)



# DAY 1 AUDITORIUM AGENDA



**Date**  
23 June 2026



**Time**  
09:00 - 17:00



**Location**  
University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	SPEAKER	AFFILIATION
09:00 - 09:10	Institutional Welcome	TBD	
09:10 - 09:20	CCEE and GEM	Josip Atalić	University of Zagreb
09:20 - 09:30	Welcome to the GEM Conference 2026	Helen Crowley	GEM Foundation
	<b>Session: GEM Global Release 2026</b>		
09:30 - 10:00	Global Seismic Hazard v2026	Marco Pagani	GEM Foundation
10:00 - 10:30	Global Seismic Risk v2026	Vitor Silva	GEM Foundation
10:30 - 11:30	<b>Coffee break + GEM demos + GEM PhD posters</b>		
11:30 - 13:00	GEM's Seismic Hazard Mosaic	Kendra Johnson	GEM Foundation
	Global Block Model (Active Faults Database)	Richard Styron	GEM Foundation
	Global Stochastic Event Set (SEESAWS)	Manuela Vilani	GEM Foundation
	Global Earthquake Catalogue	Kirsty Bayliss	GEM Foundation
	Global Ground Motion Flat File	Christopher Brooks	
13:00 - 14:30	<b>Lunch</b>		
14:30 - 14:45	GEM's New Vulnerability Modelling Framework	Al Mouayed Bellah Nafeh	GEM Foundation
14:45 - 15:00	Future Exposure/Risk to 2065	Alejandro Calderón	GEM Foundation
15:00 - 15:15	Global Exposure of Infrastructure to Liquefaction	Catarina Costa	GEM Foundation
15:15 - 15:30	Global Carbon Cost of Earthquakes	Martina Caruso	GEM Foundation
15:30 - 16:00	<b>Coffee break + GEM demos + GEM PhD posters</b>		
16:00 - 16:30	<b>Keynote:</b> Advancing Seismic Risk Assessment in El Salvador using GEM Tools Moderator: Lindsay Davies, USGS	Luis Mixco	MARN, El Salvador
16:30 - 17:00	<b>Ignite Session</b> for Live Demos Moderator: Iain Stewart, University of Plymouth		

# DAY 2 AUDITORIUM AGENDA (AM)



**Date**  
24 June 2026



**Time**  
09:00 - 14:15



**Location**  
University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	SPEAKER	AFFILIATION
09:00 - 09:10	Welcome to day 2	Helen Crowley	GEM Foundation
	<b>Session: Dynamic Exposure Modelling</b> <b>Moderator: TBD</b>		
09:10 - 09:30	Invited Talk: Forward-looking Exposure Modelling for Human-centred Urban Disaster Mitigation	Carmine Galasso	University College London, UK
09:30 - 09:45	Machine Learning Forecasting Techniques for Earth Observation Data	Christian Geiß	German Aerospace Center
09:45 - 10:00	Spatial Disaggregation and Temporal Projection of Building Exposure and Physical Vulnerability using Deep Constrained Clustering and Probabilistic Graph Deep Learning	Joshua Dimasaka*	University of Cambridge, UK
10:00 - 10:15	Predicting population displacement due to earthquakes globally	Nicole Paul	University College London, UK / ETH Zurich, Switzerland
10:15 - 10:30	Baseline Survey Framework for GEM-Standardised National Building Exposure Model towards Earthquake Risk Assessment in Uganda	Morris Oleng*	National Building Review Board, Uganda
10:30 - 11:30	<b>Coffee break + demos + posters</b>		
	<b>Session: Next Generation Vulnerability</b> <b>Moderator: Ana Beatriz Acevedo, EAFIT University, Colombia</b>		
11:30 - 11:45	A Framework for Assessing the Seismic Vulnerability of Indonesian Infilled Masonry Dwellings	Angga Sabaruliman	The University of Sydney, Australia
11:45 - 12:00	Integrated Seismic Risk Assessment for Masonry Structures in the Marmara Region: AEM-Based Simulations and PML Comparative Analysis	Seyhan Okuyan Akcan*	Boğaziçi University, Turkey
12:00 - 12:15	Reduction of seismic risk for typical URM residential buildings in Zagreb using target retrofitting	Ante Pilipović	University of Zagreb, Croatia
12:15 - 12:30	From spatial correlation to damage dependence and IM conversion in seismic risk models	Gerard O'Reilly	IUSS Pavia, Italy
12:30 - 12:45	Vulnerability modelling for embodied carbon (title TBD)	Karim Aljawhari	GEM Foundation
12:45 - 14:15	<b>Lunch</b>		

# DAY 2 AUDITORIUM AGENDA (PM)



**Date**  
24 June 2026



**Time**  
14:15 - 18:00



**Location**  
University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	SPEAKER	AFFILIATION
	<b>Session: Disaster Risk Reduction Applications (Moderator: Jenty Kirsch Wood, UNDRR)</b>		
14:15 - 14:30	Reducing Disaster Risk: Translating Technical Models to Implementation	Veronica Cedillos	GeoHazards International, USA
14:30 - 14:45	Implementing and Scaling Up Earthquake Desks: A Practical Disaster Risk Reduction Application for Schools	Sweata Sijapati*	GeoHazards International, Nepal
14:45 - 15:00	From Risk Modelling to Policy Development: Early Applications of Canada's National Seismic Risk Model	Carlos Molina Hutt	University of British Columbia, Canada
15:00 - 15:15	Scenario Risk Results for the Department of Antioquia (Colombia)	Ana Beatriz Acevedo	EAFIT University, Colombia
15:15 - 15:45	<b>Panel Taking stock: Measuring impact in disaster risk reduction (Moderator: Jenty Kirsch Wood, UNDRR)</b>		
15:45 - 16:45	<b>Coffee break + demos + posters</b>		
	<b>Session: Financial Risk Transfer (Moderator: Laurie Johnson, Laurie Johnson Consulting)</b>		
16:45 - 17:00	<b>Invited Talk: GEM as a Key Pillar of a Flexible and Diversified Cat Model Ecosystem</b>	Iwan Stalder	Zurich Insurance, Switzerland
17:00 - 17:15	Building a Nationwide, Seismic Sensor-based, Parametric Earthquake Insurance Program for Morocco	Evan Reis	Safehub, USA
17:15 - 17:30	GEM Product Applications in the (Re)insurance Industry	Molly Gallahue	Gallagher Re, UK
17:30 - 17:45	Understanding Earthquake Catastrophe Risk in the Balkans: A new Guy Carpenter Model	Robert Churchill	Guy Carpenter, UK
17:45 - 18:00	Advancing Catastrophe Models with Earthquake-Triggered Secondary Geoperils: A Case Study for Italy	Abril Sanchez	Aon/Impact Forecasting, Czech Republic

# DAY 2 NATIONAL HAZARD WORKSHOP AGENDA



**Date**  
24 June 2026



**Time**  
09:00 - 18:00



**Location**  
University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	SPEAKER	AFFILIATION
09:00 - 09:30	Australian National Seismic Hazard Model (NSHM)	Trevor Allen	Geoscience Australia
09:30 - 10:00	Probabilistic seismic hazard assessment for mainland France and the French Lesser Antilles islands	Céline Beauval	ISTerre, France
10:00 - 10:30	New Zealand NSHM	Matt Gerstenberger	Earth Sciences New Zealand
10:30 - 11:15	<b>Coffee break + demos + posters</b>		
11:15 - 11:45	Seismic Hazard Assessment in Japan: Recent Updates and Emerging Challenges	Asako Iwaki	NIED, Japan
11:45 - 12:15	The USGS National Seismic Hazard Models and Their Use in U.S. Building Codes	Nico Luco	U.S. Geological Survey
12:15 - 12:45	Swiss NSHM	Laurentiu Danciu	SED/ETH Zurich, Switzerland
12:45 - 14:15	<b>Lunch</b>		
14:15 - 14:45	Probabilistic Seismic Hazard Assessment for Taiwan: Updates and Improvements in TEM PSHA2025	Chung-Han Chan	E-DReaM Center, Taiwan
14:45 - 15:15	Italian NSHM	Akinci and D'Amico	INGV, Italy
15:15 - 15:45	Progress towards updating Canada's National Seismic Hazard and Risk Models	Michal Kolaj	Natural Resources Canada
15:45 - 16:30	<b>Coffee break + demos + posters</b>		
16:30 - 17:00	Country-Scale Seismic Hazard Assessment in Data-Scarce Regions of the East African Rift	Mohammed Al-Ajamee*	University of Khartoum, Sudan
17:00 - 17:30	NSHM Guidelines		
17:30 - 18:00	Discussion		

# DAY 3 AUDITORIUM AGENDA



**Date**  
25 June 2026



**Time**  
09:00 - 15:00



**Location**  
University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	SPEAKER	AFFILIATION
09:00 09:10	Welcome to day 3 <b>Session: Scenarios and Cascading Hazards (Moderator: Indranil Kongar, University College London)</b>	Helen Crowley	GEM Foundation
09:10 09:25	The Global Tsunami Model association Probabilistic Tsunami Hazard Model (GTMTHM26) progress	Stefano Lorito	INGV, Italy
09:25 09:40	From Hazard Science to Actionable Insights: Bridging the Global Tsunami Risk Gap for Societal and Financial Resilience	Naveen Ragu Ramalingam <sup>^</sup>	Norwegian Geotechnical Institute
09:40 09:55	Toward Enhanced Portfolio Seismic Risk Estimates via Physics-Based Ground Motion Simulations	Preetish Kakoty	University College London, UK
09:55 10:10	A Methodology for Modeling of Mainshock-Aftershock Seismic Loss Assessment	Ömer Faruk Kalayci*	Istanbul Technical University, Turkey
10:10 10:25	Modelling earthquake sequences: When does damage accumulation matter?	Cecilia Nievas	GFZ Helmholtz Centre for Geosciences, Germany
10:25 10:40	Rethinking uncertainties for seismic hazard scenarios: A case study of the Lembang and Cimandiri faults in Indonesia	Ekbal Hussain	British Geological Survey
10:40 11:25	<b>Coffee break + demos + posters</b>  <b>Session: Recent Damaging Earthquakes and Emergency Response (Moderator: Alexandru Tiganescu)</b>		
11:25 11:40	Was the 30 September 2025 Mw6.9 Offshore Northern Cebu Earthquake Effectively Forecasted Using EBSPPRA?	Azdine Kay Ysulan*	PHIVOLCS
11:40 11:55	Towards the Development of Static Ground Displacement and Transient Ground Strain ShakeMaps	David Wald	U.S. Geological Survey
11:55 12:10	Developing PAGER 2.0: Next Generation Forecasts to Inform Rapid Global Earthquake Response	Kishor Jaiswal	U.S. Geological Survey
12:10 12:25	Towards uncertainty-based tsunami exposure models for rapid post-event assessment	Finn Løvholt	Norwegian Geotechnical Institute
12:25 12:45	<b>Invited Talk: Advancing Global Earthquake Impact Estimation for Humanitarians in GDACS and beyond - A Review of Achievements, Challenges and Opportunities over the Past Year</b>	Marzia Santini	Joint Research Centre, Italy
12:45 13:00	Closure of GEM Conference 2026	Helen Crowley	GEM Foundation
13:00 14:30	<b>Lunch / Governing Board Meeting</b>		
15:30	Field Trip		

\* early career researcher with travel grant ^ early career researcher with fee waiver



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# DAY 3 NATIONAL HAZARD WORKSHOP AGENDA



**Date**  
25 June 2026



**Time**  
09:00 - 12:45



**Location**  
University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	SPEAKER	AFFILIATION
09:00 - 09:30	Transforming Seismic Hazard Models to Industry-Ready Risk Models	Jochen Woessner	Moody's RMS, Switzerland
09:30 - 10:00	National seismic hazard assessment for dams: emphasis on Himalaya and Northeast Indian region	Mukat Lal Sharma	Indian Institute of Technology Roorkee
10:00 - 10:30	From fault data to fault sources in South America: Experiences and challenges from the GEM-SARA project	Carlos Costa*	Universidad Nacional de San Luis, Argentina
10:30 - 11:15	<b>Coffee break + demos + posters</b>		
11:15 - 11:45	Understanding the Regional Variability of Ground Motion across South America for Subduction Earthquakes	Jorge Luis Paredes Estacio	University of Bristol, UK
11:45 - 12:15	Residual Analysis of Algerian Strong-Motion Data for GMPE Validation and Site-Effects Assessment	Faouzi Gherboudj	Centre National de Recherche en Génie Parasismique, Algeria
12:15 - 12:45	<b>Closure of National seismic hazard modelling workshop</b>	Marco Pagani	GEM Foundation

# **GEM CONFERENCE**

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# **DAILY POSTERS & DEMOS SCHEDULE**

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# POSTERS SCHEDULE



**Date**  
23 June 2026



**Time**  
09:00 - 17:00



**Location**  
University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TITLE	PRESENTING AUTHOR	AFFILIATION
Adjusting the Economic Impact from Past Earthquakes for the Validation of Loss Models	Zarin Karim Zadeh	University of Aveiro, Portugal
Development of a fault-based ETAS simulator for enhanced PSHA: Integrating finite rupture and stochastic triggering	Fahrettin Kuran	IUSS Pavia, Italy
A new occurrence rate model based on spatial inter-dependence between past seismicity and faults	Jarod Domenge	University of Milano Bicocca, Italy
Inferring Mainshock Ruptures from Aftershock Distributions	Zainab Asaad	IUSS Pavia, Italy
Real Time Earthquake Impact Conditioning via Building Sensors	Amir Taherian	University of Aveiro, Portugal
AI-Based Automated Exposure Models for Natural Hazard Risk Assessment	Daniel Gomez	University of Aveiro, Portugal
Development of an Exposure Model for the Industrial Building Stock in Europe	Fatemeh Alishahiha	IUSS Pavia, Italy
State-Dependent Fragility and Vulnerability Models Accounting for Damage Accumulation in the Sequential Earthquakes	Furkan Nalitepe	IUSS Pavia, Italy
Epistemic uncertainties in hazard modeling: impact on risk metrics and insurance premiums	Julián Montejo	University of Chieti, Italy
Earthquake rapid damage assessment of buildings, using remote sensing and AI	Niloofar Kazemiasl	IUSS Pavia, Italy

# POSTERS SCHEDULE



## Date

24 June 2026



## Time

10:30 - 11:30 /  
15:45 - 16:45



## Location

University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	PRESENTING AUTHOR	AFFILIATION
10:30 - 11:30	Data availability and probabilistic seismic hazard studies for resilient cities in Sub-Saharan Africa	Umar Afegbua Kadiri	Centre for Geodesy and Geodynamics, Nigeria
10:30 - 11:30	Evaluation of Equivalent Linear and Nonlinear Ground Response approaches for Deep Alluvial Soils in the Eastern Indo-Gangetic Basin	Mudit Srivastava <sup>^</sup>	Indian Institute of Technology Roorkee
10:30 - 11:30	Integrating Basin-Scale Site Response and Non-Ergodic Effects into National Seismic Hazard Models: Lessons from Los Angeles, Po Basin, and Emerging Applications in India	Rashid Shams <sup>^</sup>	University of Southern California, USA
10:30 - 11:30	Enhancing Disaster Resilience through Advanced Short-Term Forecasting and Cascading Hazard Modeling: A Case Study of the 2005 Kashmir Earthquake	Mona Lisa <sup>^</sup>	Quaid-i-Azam University (QAU), Pakistan
10:30 - 11:30	Influence of Modelling Simplifications and Analysis Choices on Regional Seismic Fragility and Risk Assessments	Serkan Hasanoglu	IUSS Pavia, Italy
10:30 - 11:30	A Generic Ground Motion Set for Hazard-Consistent Incremental Dynamic Analysis in Wellington, New Zealand	Srijana Gurung Shrestha <sup>^</sup>	University of Canterbury, New Zealand
10:30 - 11:30	Impact chain-driven exposure characterization for urban multi-hazard analysis	Margherita Rago	University of Genova
10:30 - 11:30	GeoRiskNet	John Schneider	Schneider Geohazards Pty Ltd, Australia
15:45 - 16:45	National Seismic Risk Model for Colombia	Miguel Mora	Geological Survey of Colombia
15:45 - 16:45	Synthetic intensity maps of certain events in Northern Algeria using PGV and PGA parameters	Redouane Chimouni <sup>*</sup>	CRAAG, Algeria
15:45 - 16:45	Information Content in Earthquake Nowcasting: The Role of Aftershock Clustering	Sonu Devi <sup>^</sup>	Birla Institute of Technology and Science, India
15:45 - 16:45	Improved Seismic Source Zonation Using DBSCAN Clustering – Jordan and Neighbouring Areas	Nadin Abu Hayah	University of Bristol, UK
15:45 - 16:45	Seismicity of Namibia	Mako Sitali <sup>*</sup>	Geological Survey of Namibia
15:45 - 16:45	Forecasting the spatial distribution of earthquakes for the Indian national seismic hazard model through smoothed gridded seismicity	C Lallawmawma <sup>*</sup>	Indian Institute of Technology Roorkee
15:45 - 16:45	Development of Region-Specific Ground Motion Prediction from Strong-Motion Observations for NSHM of India	Ravindra Kumar Gupta <sup>*</sup>	Indian Institute of Technology Roorkee
15:45 - 16:45	Modifying recent Ground Motion Prediction Equations using Egyptian seismological data	Samar Ghareeb <sup>*</sup>	National Research Institute of Astronomy and Geophysics, Egypt

# POSTERS SCHEDULE



**Date**  
25 June 2026



**Time**  
10:40 - 11:25



**Location**  
University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	PRESENTING AUTHOR	AFFILIATION
10:40 - 11:25	Inequality in Disaster Outcomes: Learnings from High-Risk Groups through Solidarity Practices	Senem Doyduk	Sakarya University, Turkey
10:40 - 11:25	An adaptive, uncertainty-aware framework for regional seismic risk assessment integrating microzonation and multi-level vulnerability and exposure modeling	Federico Ugolini	University of Trento, Italy
10:40 - 11:25	Using Scenarios to Mitigate Earthquake Risk	Veronica Cedillos	GeoHazards International, USA
10:40 - 11:25	Toward National-Scale Probabilistic Seismic Risk Assessment for Taiwan with Building-Level Exposure	Jia-Sheng Hung	National Central University, Taiwan
10:40 - 11:25	Seismic risk assessment of the Marrakech region using the RADIUS methodology and geographic information systems: a proposed preliminary study	Souad El Bakali Ettahiri	University of Hassan II Casablanca, Morocco
10:40 - 11:25	Scenario-Based Seismic Risk Assessment for the City of Fez, Morocco	Ismail Bouabid*	University of Hassan II Casablanca, Morocco
10:40 - 11:25	Fault-Based Scenario Seismic Hazard Analysis for Bulawayo, Zimbabwe: Insights from the 2008 Nyamandlovu Earthquake	Brassnavy Manzunzu*	National University of Science and Technology, Zimbabwe
10:40 - 11:25	Scenario-based Regional Scale Seismic Risk Assessment	Shiladitya Mandal^	Indian Institute of Technology Madras

# LIVE DEMO SCHEDULE



## Date

24 June 2026  
25 June 2026



## Time

10:30 - 11:30  
15:45 - 16:45  
10:40 - 11:25



## Location

University of Zagreb, Croatia

**Conference Title:** GEM Conference 2026 - From Faults To Future Scenarios

TIME	TITLE	PRESENTING AUTHOR	AFFILIATION
<b>JUN 24, 2026</b>			
10:30 - 11:30	IRMA – Italian Risk MAs: A platform for seismic risk assessment of different exposed assets	Barbara Borzi	Eucentre Foundation, Italy
10:30 - 11:30	Rapid RAPID-Lens: An Integrated GUI for Automated Building Typology Classification using Vision Transformers and Street-Level Imagery	Sukh Sagar Shukla <sup>^</sup>	Indian Institute of Technology Mandi
10:30 - 11:30	Comparative Seismic Risk Assessment of Indian Urban Centers under the Revised IS 1893 Hazard Framework	Ravi Kanth Sriwastav <sup>^</sup>	Pandit Deendayal Energy University, India
10:30 - 11:30	The Benefits of the New International Macroseismic Scale (IMS-25)	David Wald	U.S. Geological Survey
15:45 - 16:45	SwissRe CatNet® – a tool for natural hazard analysis	Michael Ewald	SwissRe, Switzerland
15:45 - 16:45	New Zealand Liquefaction Model – challenges and opportunities	Maxim Millen	Tonkin & Taylor Ltd, New Zealand
15:45 - 16:45	From Static Maps to Interactive Analysis: An Information System for the DOST-PHIVOLCS Spectral Acceleration Map of the Philippines	Jonathan Victorero <sup>^</sup>	University of Southeastern Philippines
15:45 - 16:45	A Reproducible GMPE-Ensemble Framework for Ground Motion Simulation of 2019 Silivri, Istanbul (Mw 5.8) Earthquake	Wilfrid Djima	Gebze Technical University, Turkey
<b>JUN 25, 2026</b>			
10:40 - 11:25	Development of the Japan Strong Motion Data Platform	Yuma Matsumoto	National Research Institute for Earth Science and Disaster Resilience, Japan
10:40 - 11:25	Rapid Tsunami Inundation and Risk Modelling with Machine Learning and OpenQuake	Naveen Ragu Ramalingam <sup>^</sup>	Norwegian Geotechnical Institute
10:40 - 11:25	Shake Anywhere: a simulation-free AI-based earthquake ground motion generator for any source/any geology	Filippo Gatti	CentraleSupélec / Université Paris-Saclay, France
10:40 - 11:25	An OpenQuake-Based Rapid Earthquake Loss Estimation System for Romania and Its Role in Decision Support	Dragos Toma-Danila	National Institute for Earth Physics, Romania