Schweizerischer Erdbebendienst
Service Sismologique Suisse
Servizio Sismico Svizzero
Swiss Seismological Service

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

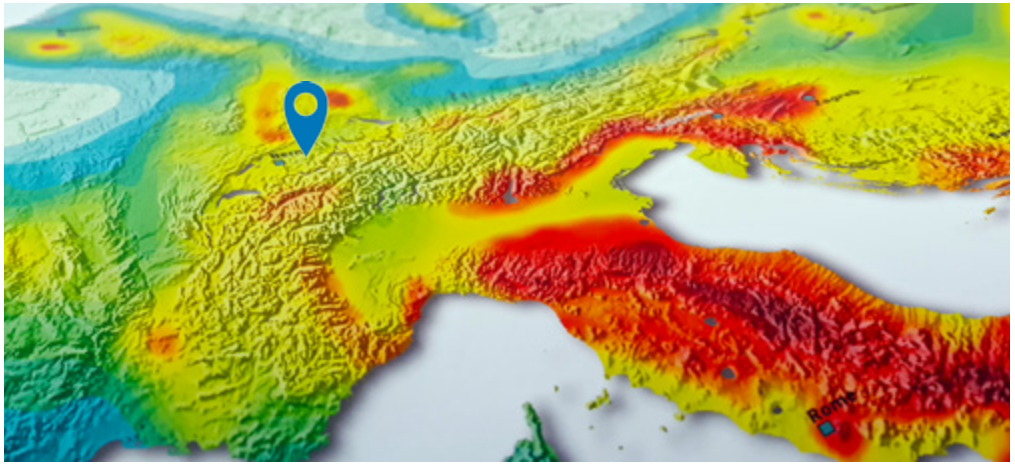
EPOS
EUROPEAN PLATE OBSERVING SYSTEM

EFEHR

PSHA Workshop

Future directions for probabilistic seismic hazard assessment at a local, national and transnational scale

5 to 7 September 2017, Switzerland



Objectives

This scientific workshop brings together about 100 to 150 leading experts on Probabilistic Seismic Hazard Assessment (PSHA) from around the globe to discuss the current state of practice as well as future directions. The workshop will adopt a holistic point of view (i.e. interdisciplinary, multiple spatial- and temporal scales), critically reflecting all elements of modern PSHA. Distinguished keynote speakers will introduce a range of topics, but we also call for solicited contributions (oral and poster). We will allocate sufficient time for discussions and networking, and the beautiful castle in Lenzburg offers a unique setting.

Revisiting past and ongoing site-specific projects on local, national or transnational scales, we strive to draw conclusions for future PSHA projects. We will also reflect on emerging challenges, such as time-dependence, earthquake interactions, anthropogenic seismicity, model validation, simulation based PSHA, communication of hazard results and procedural requirements for ensuring robustness, especially in the context of PSHA for critical facilities. On day three, we will focus specifically on the needs of community and harmonization projects, such as the next-generation European PSHA.

Location

Lenzburg castle, Switzerland (www.schloss-lenzburg.ch/en/). Lenzburg is located 20 minutes by train from Zurich main station, and about 60 minutes by train from Zurich airport.

Registration & Abstract Submission

Registration & abstract submission will open in June.

Accommodation

Mostly in Hotels in Lenzburg, within walking distance to the castle.

Local Organising Committee

Prof. Stefan Wiemer, Prof. Domenico Giardini, Dr. Florian Haslinger and Dr. Laurentiu Danciu from ETH Zurich

Confirmed Keynote Speakers (Preliminary List)

Prof. Norm Abrahamson, PG&E
Prof. John Adams, Geological Survey of Canada
Prof. Fabrice Cotton, GFZ
Dr. Helen Crowley, Eurocentre
Prof. Donat Fäh, ETH Zurich
Dr. Ned Field, USGS
Dr. Matt Gerstenberger, GNS Science
Prof. Domenico Giardini, ETH Zurich
Prof. David Jackson, UCLA
Dr. Dalguer Luis, swissnuclear
Prof. Martin Mai, KAUST
Dr. Warner Marzocchi, INGV
Dr. Marco Pagani, GEM
Prof. Kyriazis Pitilakis, Aristotle Unversity
Prof. Erdal Safak, Bogazici University
Dr. Danijel Schorlemmer, GFZ
Prof. Seth Stein, Northwestern University
Dr. Gianluca Valensise, INGV
Prof. Stefan Wiemer, ETH Zurich

Sessions

The workshop will be structured in six sessions:

1 Lessons Learned

Tuesday morning, 5 September

Recent PSHA studies at local, national and transnational level e.g. SHARE, EMME, China, US, Canada, Italy, France, Switzerland, Latin America, New Zealand, GEM global effort

2 Seismogenic Source Modelling

Tuesday afternoon, 5 September

- Earthquake catalogue challenges
- Geodetic/strain data and their use in PSHA
- Geological input (seismogenic sources, active faults, tectonic regimes and regionalization)
- Integrating geodetic, geological and seismological data
- Time-dependent processes and anthropogenic effects
- Uncertainty quantification and potential biases
- Challenges related to determining the maximum possible earthquake

3 Ground Motion Predictions

Wednesday morning, 6 September

- GMPEs (global, regional, local)
- Replacing GMPEs with waveform modelling (California, Europe, etc.)
- Extreme ground motions
- Directivity, near-source effects

4 Site Characterisation

Wednesday afternoon, 6 September

- Site classification and reference rock conditions
- Site effect including non-linear effects
- Micro-zonation: examples, concepts and techniques
- Standardisation and databased data-exchange
- Interface to building codes

5 Hazard Integration

Thursday morning, 7 September

- Challenges and good practise in hazard calculations
- Sensitivity analysis in seismic hazard assessment
- Correlations (spatial, period-to-period)
- Logic-trees, ensemble modelling and alternative models
- Low-probability hazard (10^{-4} to 10^{-7})
- Characterizing epistemic uncertainties
- Validation of PSHA and model components
- Communicating PSHA
- Challenging the PSHA concept
- From hazard to risk

6 Coordinating European Efforts

Thursday afternoon, 7 September

- Recent or ongoing revisions of national hazards
- Plans to integrate national efforts in transnational efforts
- Hazard and risk services in Europe as part of EPOS
- Community needs and governance