SESSION 40- Advances in Integrating Geodetic Data, Site Conditions, and Other Approaches for Seismic Hazard Analysis

Conveners

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Session Description

Seismic hazard analysis has greatly benefited from recent progress in a range of scientific fields, including geodesy, engineering seismology, and geology. Geodetic techniques (GNSS and InSAR, etc.) enable the recognition of crustal deformation related to potential seismic source zones and seismogenic faults, which provides significant constraints for seismic hazard analysis. Meanwhile, site conditions represent an essential element influencing site effects, which constitute a significant component for ground motion estimation.

This session aims to bring together multidisciplinary contributions from the fields of geodesy, engineering seismology, and geology. We welcome studies addressing, but not limited to, the following topics:

- Geodetic observations, data, and analysis to extract the information of tectonic deformation;
- The geodetic methodology and technique for deriving strain-rate fields and their applications in seismic source characterization;
- Studies of fault kinematic characteristics, including fault coupling, creep, and slip transients during earthquake cycle for large earthquake recurrence times;
- Application of novel proxies and hybrid methods to determine site conditions and site response for seismic hazard research;
- Integration of shallow site conditions with deeper subsurface structure on seismic ground motion estimation;
- Evaluation of post-earthquake, seasonal, and climate-change driven changes in site response;

We also encourage contributions to new technologies (seafloor geodesy, machine learning, optic fiber, and others) aiming at seismic ground motion, seismic hazard, prompt response, zonation and microzonation.