



Session 28

Fast seismo-geodetic rupture inversion for early warning and rapid impact assessment

Conveners:

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Retrieving earthquake rupture parameters in (near) real time is essential for more reliable early warning accounting for cascade effects, such as tsunami generation and landslide triggering, as well as for rapid impact assessment with an ultimate goal to support civil protection decisions. Multisensor seismo-geodetic data streaming and real-time joint processing allows generation of coseismic displacements necessary to invert for finite source rupture models of different complexity. Rupture inversion methods need to be simple and flexible in their parameterization to allow fast and robust results. The latter, in turn, may be used to generate synthetic ground motion and landslide susceptibility maps to rapidly, within minutes, assess earthquake-affected areas as well as to assimilate source information for reducing tsunami forecasting uncertainty for early warning.

We invite presentations along the entire workflow-chain including but not limited to: real-time GNSS and joint seismo-geodetic data processing; fast and robust source inversion into rupture models of different complexity (from point source centroid moment tensors to finite faults); simulation of ground motion and landslide susceptibility maps based on source parameters; fast implementation of rupture parameters into tsunami forecasting for early warning.