



Session 19

Physics of earthquakes and seismic sources

Conveners:

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Earthquake physics attempts to answer fundamental questions in seismology as how do earthquakes prepare, how does seismic rupture start, propagate and stop, what is the role of the long-term and short-term processes in the Earth, what is the role of fluids in earthquake triggering, and what is the link between fault dynamics, energy, friction and other physical parameters of the focal zone. Recent advances in seismological, geodetic and satellite observations provide a vast amount of data, which, linked with advances in computational methods, have significantly expanded our ability to study earthquake related phenomena on various scales. Nevertheless, despite the achieved progress, earthquake source processes are not often sufficiently understood and in some cases the results are controversial, calling for increased efforts towards source studies.

The goal of this session is to attract scientific contributions related to broad aspects of methodological as well as data-oriented earthquake source studies. Submissions focusing on earthquake source parameters, focal mechanisms and their inversion for stress, non-doublecouple components of moment tensors, source slip inversions, finite fault inversions, back-projection techniques and their applications, resolution limits and related uncertainties are particularly welcome as well as physics-based simulations. In addition, the session is suitable for studies of source imaging as well as frequency-dependent source parameters, imaging of dynamic rupture, characterization of source complexity, statistical properties of earthquake source parameters as scaling laws etc.