

## **SESSION 28- Joint ESC/SSA Sponsored Session: Fault2SHA, Transform and Strike-Slip Faults Underfoot, from Seismotectonics to Seismic Hazard and Modeling**

### **Conveners**

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### **Session Description**

Earthquakes represent a major source of economic losses and social disruption. Proper characterization of seismic hazard and fault displacement hazard could provide useful information for targeted mitigation and for safe land planning. We welcome contributions revolving around the hazard characterization from different perspectives with a particular focus is on transform and strike-slip faults on land, which play a critical role in seismotectonics and represent a major seismic hazard across a variety of global locales. These faults range from mature and well developed systems such as the North Anatolian, San Andreas and the Alpine Fault to less mature but complex multifault systems such as those prevalent in the eastern Californian shear zone, intraplate Japan or Southwest Puerto Rico. Many of these systems represent a significant risk to local populations and can host large earthquakes with magnitudes typically up to 8. Recent earthquakes on various strike-slip faults across the globe, followed by field-studies and modelling, have brought new insights into all aspects of fault behavior, helping mitigate their societal impact. Yet, several fundamental research questions remain. For example, how does the fault structure affect the growth and termination of earthquakes? Are the earthquake source characteristics segment-dependent? How can we identify the state of stress and strength of these faults at depth? How can we employ the current knowledge on slip modes and barriers on faults to improve earthquake forecasts? Finally, how can these new insights improve hazard estimates and mitigation planning?



We invite contributions discussing new observations, analyses, numerical models and/or methods that help characterize the fault systems and related hazard globally. The goal is to improve our understanding of the physical and mechanical faulting processes and their resulting hazard, especially near populated regions, bridging the gap from field-based data acquisition to modeling and implementation into practice. The session celebrates the 10 years of activity of Fault2SHA, an ESC working group focused on favoring exchanges between field geologists, fault modelers and hazard practitioners.

We welcome contributions on:

- Field reconnaissance and mapping of recent surface-breaking earthquakes.
- Observational, theoretical, and analytical studies addressing seismic processes and seismicity of transform and/or strike-slip faults underfoot.
- Development of models targeted at fault displacement hazard assessment, using empirical or numerical approaches.
- Use of earthquake cycle simulators and laboratory experiments to investigate the seismic cycle.
- Integration of fault-based data in seismic hazard assessment.
- Evaluation of seismic hazard for the regions at risk.
- Transfer of know-how between earthquake geology, modeling and the applied sector.

