SE02: The earthquake cycle: squaring the circle

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Session Description

In recent years the earthquake cycle model in its simplest form – the steady interseismic build-up of strain, released at regular intervals in an earthquake – has been challenged by new observations and interpretations. These include (1) apparent seismic and aseismic precursory activity before major subduction earthquakes; (2) a variety of transient fault slip phenomena including fault creep, slow earthquakes and postseismic after-slip; (3) complex fault interactions including earthquake clustering, compound ruptures and remotely-triggered seismicity; and (4) long-term waxing and waning of fault activity. This session provides a platform for work on all aspects of the earthquake cycle, and seeks contributions from studies of surface deformation (such as those using high-resolution imaging techniques like InSAR and pixel correlation); surface topography and geomorphology (such as those exploiting lidar or structure-from-motion); paleoseismic or sedimentary records of earthquake recurrence; laboratory experiments of fault mechanical behaviour; and related modelling and theory.

Primary Affiliation: Solid Earth/Geodesy