

Earthquake swarms along the Oaxaca segment of the Mexico subduction zone and relationships to slow slip phenomena

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Earthquake swarms are thought to differ from traditional mainshock-aftershock sequences due to a separate driving processes such as slow slip or fluid flow. Several recent studies have suggested that tracking earthquake swarms may provide an indication of broader fault movement, which could eventually result in triggering of larger earthquakes. We utilize waveform correlation techniques to enhance the detection and characterization of earthquake swarms. We focus on the Oaxaca region of the Mexico subduction zone where a locally deployed joint seismic-GPS network has been maintained for 10 years. This network has previously been used to identify and locate many episodes of slow slip and nonvolcanic tremor across the study region. The improved temporal and spatial characterization of the earthquake swarms will be compared with the patterns of slow slip and nonvolcanic tremor to investigate the potential physical relationships between these different aspects of fault slip.