



Review and Analysis of the Coyuca 2001 Shallow Seismic Series (Mw=5.8), in Central Guerrero, Mexico.

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On October 8th, 2001 a moderate normal faulting earthquake of magnitude $M_w=5.8$ occurred close to the town of Coyuca, Mexico, at a distance $D > 50.0$ km from the Mesoamerican trench in central Guerrero. This event and the following seismic sequence occurred at a shallow depth of about 10.0 km, in the upper region of the slab interface in this zone, where the oceanic Cocos tectonic plate subducts beneath the continental North American plate at approximately 30 km depth. This zone with no large subduction thrust earthquakes since 1911 is nowadays vastly studied within the scope of the "Guerrero seismic gap" and its associated aseismic Slow Slip Events (SSE). GPS observations show a nearly 4-year periodic northward motion in central Guerrero. The first recognized cycle occurred in mid-1998 and the following cycle began by the end of 2001 reversing its motion with a more rapid velocity towards south in early 2002.

In this study, we seek to better understand the interaction between the shallow sequence of the Coyuca 2001 seismic sequence and the final phase of the associated SSE period. One of the difficulties to analyze this sequence is related to the inhomogeneous coverage of data in time scale. The local catalog starts after 22 days since the beginning of the sequence and is reliable during only 45 days. However, we performed a feasible recovering of aged data and enhanced the location of the catalog. Then, the primordial characteristics of this seismic sequence is studied through its Coulomb failure stress transfer and its possible implications.