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INTEGRATED STATIC AND DYNAMIC STRESS MODELING FOR INVESTIGATING TREMOR SOURCE REGIONS IN THE SAN ANDREAS FAULT

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The frictional and stress conditions at aseismic depths in tectonic boundaries are difficult to estimate, these are important parameters in computing stress transfer from plate motion to the seismogenetic zones of the plate boundaries, and thus, in creating seismic hazard models. Ambient and triggered tectonic tremor can be useful in the estimation of friction and stress parameters at large crustal depths. Seismic waves can trigger tremor in tectonic environments, specifically in the San Andreas Fault. A large number of ambient and triggered tremors have been reported near the creeping to locking transition zone along the Parkfield-Cholame section of the San Andreas Fault as well as in the San Jacinto and Calaveras Faults, both triggered by the 2002 Denali Fault earthquake. Ambient and triggered tremor along California is well located and documents well due to the large number of seismic stations in the region. We use recorded seismic signal from magnitude > 7.5 earthquakes to calculate the dynamic stresses capable to trigger tremor in these regions; this is integrated with local tectonic stress models with the objective to estimate the spatial variability of frictional and stress parameters along the areas where tremor are triggered. Integrating static and dynamic stress for San Andreas Fault will allow us to better understand the stress and frictional conditions necessary for tremor occurrence.