

In eastern California, active deformation is distributed along the 50-100 km wide Eastern California Shear Zone (ECSZ) that partially accommodates motion between the Pacific and North American plates. Faults oriented favorably to accommodate shearing deformation appear to terminate against a nearly orthogonal fault, the Garlock fault. The question of how dextral shear along the ECSZ terminates against the Garlock fault is integral for our understanding of seismic risk and the potential for coordinate ruptures between both fault systems. This project tests the timing and rates of shortening from one of these ECSZ faults, the Cerro Coso fault, by studying an extensive exposure of a fault zone created by a railroad tunnel. By creating a photogrammetric reconstruction of fault geometry and stratigraphy using structure-from-motion techniques and creating a "trench" log to determine the amount of shortening and degree of folding of sedimentary strata exposed in the railroad cut, the historic rate and strength of ECSZ faulting against the Garlock fault is observed.