

## Project Abstract

The aim of this study was to examine the spatial and temporal distribution of seismicity in two areas along the Pacific-North American transform plate boundary in southern California. Using data from the Southern California Earthquake Center online database (<http://www.scecdc.scec.org/catalog-search.html> (<http://www.scecdc.scec.org/catalog-search.html>)), we created 3-dimensional plots of the yearly seismic activity in an area north of the San Andreas Fault and east of Cajon Pass surrounding Silverwood lake (N latitude 34.34 S latitude 34.25, E longitude -117.235 W longitude -117.4375), as well as an area just south of the southern termination of the Clark Fault extending south along the western margin of the Salton Trough (N latitude 33.3 S latitude 33, E longitude -115.75 W longitude -116.25). The data examined spanned nearly two decades from August 1, 1983 to August 1, 2001 and were grouped in seventeen plots from August 1 of one year to August 2 of the following year using the RockWorks 2002 and RockPlot3D programs. Analysis of the Salton Trough region displays persistent microseismicity in the area just below the southern termination of the Clark fault, suggesting a blind extension of the fault farther south than previously mapped. This idea is consistent with the earlier hypothesis of Janecke et. Al. 2001. The data also shows strong correlation between activity along the southern Clark extension and nearby seismicity such as the Superstition hills event. Analysis of the Silverwood Lake data shows startling aseismicity in that area, despite numerous visible faults apparently aligned along the principle stress tensors in the region. The comparison of the two areas over a concurrent 18 year period raises interesting questions about the seismic behavior of the entire southern California region.