Fault displacement and fold contraction estimated by unfolding of Quaternary strata, onshore and offshore Ventura basin, California

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Non-technical Summary

This project investigates slip direction and slip rate on the onshore and offshore Oak Ridge fault. Digital maps and images of subsurface layers were created and the map of a deformed 1 million year layer was restored to horizontal, resulting in fault slip estimates. Using the existing onshore map, the horizontal component of slip between Ventura and Santa Paula is 1.5 mm/yr. Addition of a connecting fault across Ventura basin near Santa Paula permits the previous estimate of 3.5 mm/yr left-horizontal motion for this fault segment, most of which continues on the offshore fault.