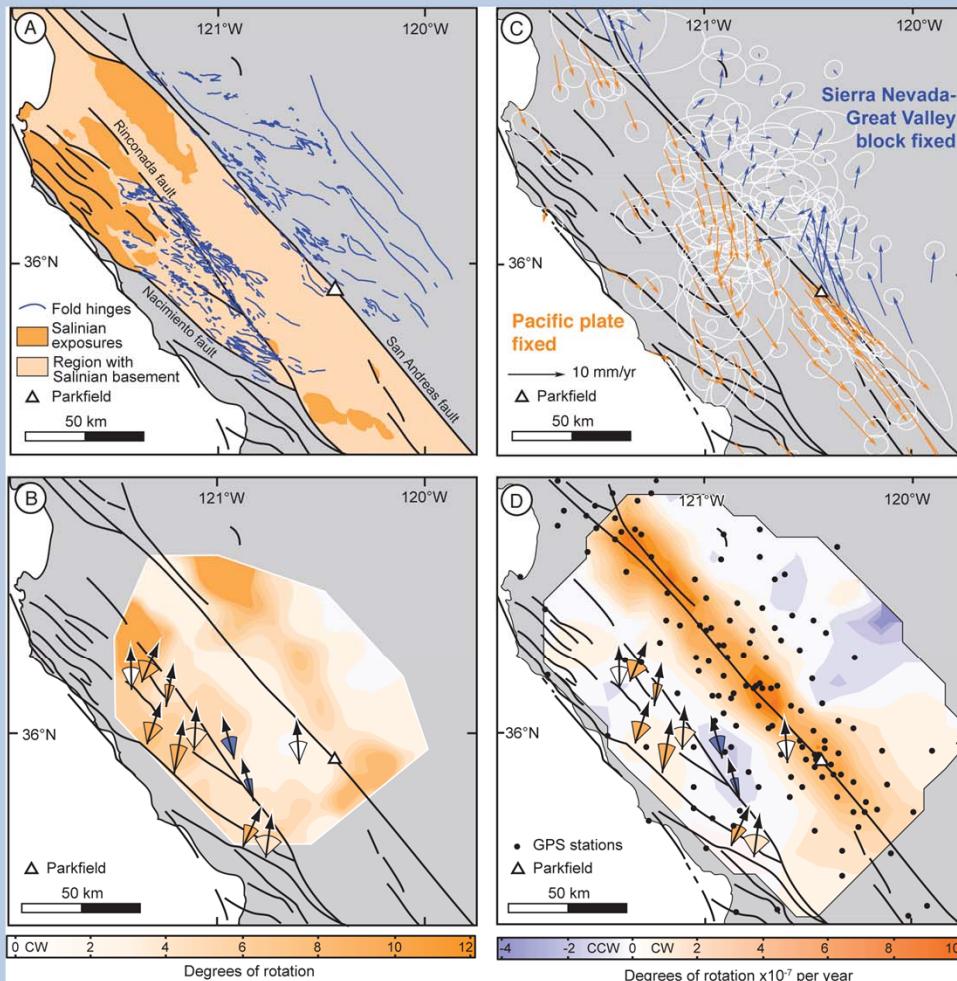


# Using paleomagnetism to understand distributed deformation across the San Andreas fault system, central California

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The San Andreas fault system marks the boundary between the Pacific and North American plates. I am interested in understanding how plate boundary deformation is accommodated across central California.

To do this, I use the ancient magnetic signature preserved in rocks along the Rinconada fault. The results, illustrated as arrows in (B) and (D), show the degree and direction that rocks have rotated since their formation (if an arrow points N, there has been no rotation).

The rotations vary in central California. We find the largest close to the Rinconada and Nacimiento faults and match predictions based on folds, illustrated by contours in (B). We also observe a region of counterclockwise rotations that seems to be related to the creeping segment of the San Andreas fault. These match counterclockwise rotations predicted from the GPS velocity field (C) illustrated by the contours in (D). This finding especially has implications for fault behavior over the past several million years.