

Sedimentary Basin Inversion in Rotational Tectonics

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The primary goal of this research is to evaluate how tectonic block rotation affects the formation and inversion of sedimentary basins and the development of hydrocarbons in these rotated basins. The oil-bearing rock units in the Santa Maria Basin were folded and faulted as a result of vertical-axis rotation. We are using river terraces as markers to investigate whether this rotational deformation is still active, and the amount of recent deformation. We have mapped several levels of terraces in the Santa Cruz Creek drainage that appear to be folded and faulted (right). Dating of these terraces is now in progress and will allow us to document the timing and amount of recent deformation related to rotational inversion of the area.

