

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 kinematic indicators, structural patterns, and stratigraphic data from Quaternary units in the basin to evaluate the kinematic history of the Little Pine Fault, which is one of the main basin-bounding faults. These data are helping us determine the role this structure played in basin inversion and to what extent it accommodated rotation in the area.

