

Wrench Fault Related Fractures in South and Central America

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Major convergent wrench faults create specific arrangements of structural elements in very tight zones. In South and Central America, en-echelon folds-as part of the structural assembly of wrench faults-were developed and hosts highly fractured Pre-Cambrian to Cretaceous reservoirs of enormous hydrocarbon reserves. A parallel to the fold axis thrust faults normally bound these folds.

Exploring for fractured reservoirs in South and Central America requires an integrated effort to delineate the structural style and the distribution of stress within the area of interest. Evaluating and developing these reservoirs begins with a detailed analysis of the geometry of fractures and their relation to the structural style of the basin

Conjugate fractures within the Sub-Andean basins are regionally striking in a NW-SE and WNW-ESE orientation and create an angle of $60-70^{\circ}$ between them. The maximum compression stress is the bisector of this angle and is generally parallel to the WNW-ESE orientation and perpendicular to the orientation of anticlines. Fracture patterns over fault bend folds may show some differences from that pattern.

This paper discusses several examples where wrench fault-related fractures create high potential reservoirs in Venezuela, Colombia, Argentina and Bolivia with emphasizes on the relation between the production rate and location of wells.