

STRUCTURAL EVOLUTION OF THE MESOZOIC BASIN - SIERRAS OCCIDENTALES, SAN LUIS, ARGENTINA

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Sierras Occidentales are located in the western part of Southern Sierras Pampeanas, San Luis Province, central Argentina from 32° to 34° S latitude and 67°20' - 67° W longitude. The general style of the basin generated during mesozoic rifting are aligned small half-graben northwest-trending separated by subpositive to positive basement blocks like Sierra de El Gigante. The basins are located along submeridian master fault with a hanging wall to the west and the footwall to the east. The major depth are located along the main faults with more than 4000 m of continental red beds accumulated like a wedge where the thickness decrease fast to the east. During Andean deformation, that region was affected by west-vergent reverse fault and the principal basins were reactivated by positive inversion tectonic following the trend of the metamorphic foliation, along the preexistent extensional faults. The subsurface analysis of seismic lines allow to recognize two different styles within extensional regime. The northern part (32° - 33°20' S latitude) the structure are typically reactivated by positive inversion tectonic generating small ranges by fold propagation fault. Southern part is dominated by extensional regime where the reactivation is poor or non-existent. The paleocurrents analysis, the geometry of the structure in relation to the sedimentation are very useful to reanalyze the isopach maps and focus the main areas for oil exploration.