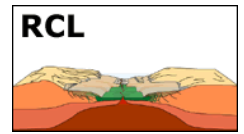


Episodic Late Quaternary Faulting Along the San Juan de los Planes and Saltito Fault Zones, Baja California Sur, Mexico



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The Baja California peninsula is actively shifting northwestward with respect to mainland México. The southern tip of the peninsula is dissected by an array of roughly north-trending, left-stepping active normal faults, apparently driven by distributed deformation in the Gulf of California and along the southern end of the Baja California peninsula. By characterizing normal-fault related deformation along the San Juan de los Planes fault zone (SJPFZ) southeast of La Paz, Baja California Sur and the Saltito fault zone east of La Paz, we contribute to understanding the patterns and rates of faulting along this southwest gulf-margin fault system in an effort to quantify the role of upper crustal processes in a transitional stage of development of an obliquely-rifted plate margin. The SJPFZ is a part of a broad left-stepping transfer zone among the southernmost active faults of the peninsula. Along the SJPFZ, the young scarp-forming fault appears to have reactivated older faults to rupture a broad, gently-sloping, low-relief pediment surface with thin Quaternary cover, reflecting the episodic nature of slip along this fault zone. Preliminary optically stimulated luminescence ages of the youngest faulted deposit imply a Late Pleistocene-Holocene slip rate of 0.1-1 mm/yr. The SJPFZ is thus characterized by reactivation of pre-existing faults to rupture a pre-existing low relief erosional landscape. These results show the protracted, yet episodic and low rate contribution played by faults such as the SJPFZ in the Gulf Margin deformation.

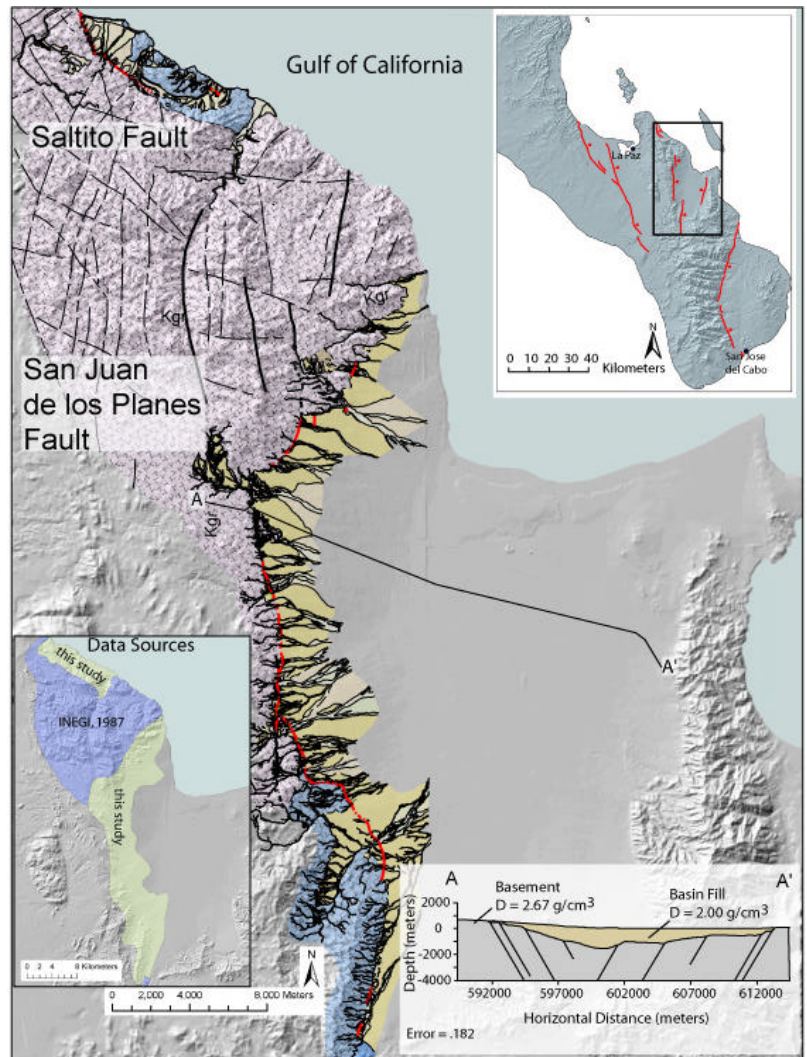


Figure: Detailed geologic map of the San Juan de los Planes and Saltito fault zones. The young scarp-forming faults are red (scarp heights range from 1-11 m) and inactive faults are black.

Upper right inset. Shaded-relief of Baja California Sur. Black box shows enlarged region. Active fault designation from Fletcher and Munguia, 2000*.

Lower right inset. Gravity study conducted along line A-A' across the Los Planes basin. Gravity data indicates the basin is approximately 1.5 km deep and may be a result of slip along a series of normal faults dipping toward the basin center.

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