



Imaging the Jalisco Block and Rivera Plate from Seismicity and Wide Angle Seismic Data from TsuJal Project

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A crustal model for the northern coast of Jalisco have been obtained from wide angle seismic data from Tsujal experiment using data collected by portable stations and the Jalisco Seismic and Accelerometric Network (RESAJ) permanent seismic stations. This model has been compare with data from the local seismicity recorded in the frame of the project "Mapping the Riviera Subduction Zone" (MARS); a temporary seismic network that was installed in the states of Jalisco, Colima and Michoacán between January 2006 and June 2007, and the data collected from RESAJ. A relocation of all MARS events using Hypo71 and the P-wave velocity model used by the RESAJ. The dataset comprise more than 2,000 earthquakes with local magnitude between 1.4 and 5.9 and depths between 1.0 and 109 km. Some crustal seismicity alignments are observed on the Jalisco Block. The geometry of the slabs is different; both are clearly separated beneath the Colima Graben. The northerly Rivera plate exhibits a curvature or bend, possibly the result of an oblique suduction process, dipping from the trench with an angle of about 10° just south of Bahía Banderas to a dip angle of 25° at the Eastern contact with the Colima Graben. We have produced profiles parallel to the trench, in a profile along the shore line and a second one 50 km inland. A subduction dip angle of 12° towards the SE direction is observed in the Rivera plate in profiles inland from Bahia de Banderas to the Colima Graben, but the seismicity ceases to define the plate for more westerly profiles which encounter the graben.