



Processes of reactivation in obliquely convergent margins

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The Andean forearc of North Chile is the locus of interaction between the oceanic Nazca plate and the continental South America plate. As a result of the oblique convergent subduction, strain partitioning occurs, i.e. margin-normal and margin-parallel strain, although this process is still poorly described and understood there. During the Eocene-Oligocene a transpressional event occurred in the Precordillera at the Salar de Punta Negra latitude (24-25°S). In contrast, the recent tectonic activity observed essentially using geomorphological markers do not indicate any strike-slip offsets, but repeated and small E-W compressive pulses that reactivate previous structures originated under transpression.

A series of analogue models has been performed in order to study the mechanisms of strike-slip and transpressive fault reactivation in perpendicular compression. Simple sandpack models are done to simulate the brittle behaviour of the upper crust. Experimental results show the influence of the previous pattern generated under strike-slip and transpressive conditions on the geometry of new former thrusts. Numerous structures reactivate and the dip angle of new thrusts increases notably, suggesting that the present-day tectonic activity in the Salar de Punta Negra area may result from shortening perpendicular to the trench that reactivates previous transpressive structures.