

## **QUATERNARY DEFORMATION ALONG THE CHILEAN ACTIVE MARGIN RELATED TO OBLIQUE CONVERGENCE**

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The Chilean Andes are situated above a subduction zone whose convergence vector is oblique to the plate boundary. The different ways by which this accommodation is achieved are problematic, especially the relation between subduction and deformation of the overriding plate. In coastal areas that are closest to the subduction trench (about 80 to 100 km offshore) the state of stress from upper Pleistocene until present is E-W extension. Neotectonic observations and structures compiled in the framework of the World Map of Major Active Faults (ILP Project II-2) show that the recent deformation is essentially characterized by vertical uplift and subsidence related to normal faulting (e.g. the Mejillones Peninsula faults, and Paposo and Salar del Carmen segments of the Atacama fault). This long-term extension is related essentially to the uplift of the Andes chain, as evidenced by uplifted marine terraces, and to the great thrust earthquakes along the interplate Waditi-Benioff zone, which are a direct consequence of the subduction. South of 32°S, the deformation is partitioned into two distinctive states, whereas north of Santiago (33°S) the Quaternary state of stress of the forearc is still unknown. In the forearc sliver, Coastal Cordillera, Central Depression and part of the Main Cordillera, compressive deformation occurs with sigma 1 trending N-S and sigma 3 vertical. In the intra-arc, compressive strike-slip deformation (transpression) occurs with sigma 1 NE-SW and sigma 3 NW-SE. This results in a N-S compressional state of stress that could be related to the effect of deformation partitioning which generates the northward displacement of the forearc sliver, along the Liquine-Ofqui Fault Zone. In the Magallanes region (southern Patagonian Andes), the plate interaction generates left lateral movement along regional-scale faults (Rio San Juan and Lago Fagnano).