



SINT-3: Fuentes sismogénicas corticales en Sudamérica

Preliminary lidar-derived topographic analysis from along Chile's fastest slipping crustal fault, Liquiñe Ofqui fault zone (LOFZ), Chilean Patagonia.

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Abstract How tectonic deformation is partitioned onto crustal structures is a major question in neotectonics (active tectonic) research. Here we present preliminary results from a Fondecyt funded research program from along the Liquiñe Ofqui Fault Zone (LOFZ) based on a new light detection and ranging (lidar) derived topographic dataset. Analysis of these data provided high resolution insight along the southern LOFZ, near the Laguna San Rafael. Specifically, LOFZ fault traces are clear, and cross-cut Holocene glacial moraines, outwash surfaces, and channels. Because the San Rafael recently occupied some of the lidar area (4,000 m Monte San Valentine, is coincident with uplift along the LOFZ, it appears that the LOFZ is playing a primary role in the persistent high topography associated with the Northern Patagonian Icecap (i.e. Campo de Hielo Norte). In the preliminary results we present here, it is important to note that lidar data allows us to see structures and deformation that are invisible without this technology and gives us new insight into how oblique subduction is manifested in active crustal structures. Because the deformation here appears rapid and recent, there is likely high associated seismic hazard along the LOFZ. Acknowledgments Fondecyt Initiation Project number 11160038: Quantifying Seismic Hazard Along Chile's fastest slipping crustal Fault, Liquiñe-Ofqui Fault Zone (LOFZ), Patagonia.