

GEOMORPHIC SIGNATURE OF QUATERNARY DEFORMATION AND STRATEGIES FOR REGIONAL NEOTECTONIC MAPPING IN ARGENTINA

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The distribution and characteristics of Quaternary tectonic deformation in Argentina is strongly influenced by the geometry of Nazca plate subduction and by plate interaction in the southernmost Patagonian Andes. More than 90% of the structures compiled within the framework of the World Map of Major Active Faults (ILP Project II-2) are above the flat-lying portion of the subducted Nazca Plate between 27° S and 33° S. Blind and emergent thrusts characterize recent and ongoing deformation at the Andean orogenic front. Quaternary craton-ward deformation is expressed by reverse faults that bound the asymmetric foreland uplifts of the Sierras Pampeanas. The main geomorphic relations include: a) rectilinear scarps related to a conspicuous wrench fault (El Tigre) and distributed reverse faulting along bedding planes, b) poorly preserved thrust-related scarps, c) warping and upbulging with different erosional stages linked to growing anticlines on the piedmont and d) reverse faults scarps related to basement thrusts in the Sierras Pampeanas.

To characterize Quaternary tectonic deformation on a regional basis one has to consider that detailed paleoseismic information is sparse. Age constraints for Neogene materials are limited and reliability of data is variable. We believe that regional-scale mapping strategies should discriminate type and geometry of deformation, occurrence of off-fault phenomena (landslides and liquefaction), type of studies (remote sensing-based, general or detailed field studies), and evaluate data reliability.