



Complex brittle deformation pattern along the Southern Patagonian Andes (Argentina)

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The Southern Patagonian Andes is located in the southern extreme of the Pacific subduction zone, where the Antarctic oceanic plate sinks underneath South America. The history of the area begins with compression during Paleozoic, Jurassic extension associated to the rift and opening of the South Atlantic Ocean, then a sag stage in the Lower Cretaceous followed by a foreland phase as a result of plate tectonics (Ghiglione et al., 2016).

The kinematic study is concentrated in the Argentinean foothills, between 46°40' and 48° SL. We measured around 800 fault planes and their striaes with the sense of movement in order to characterize the stress field. The software used to make the stress inversion were Tensor (Delvaux, 2011) and Multiple Inverse Method MIM (Yamaji et al., 2011). The stress field map was built with the results of the MIM.

We present new data from 48 sites located in the northern sector of the Southern Patagonian Andes. The measurements were made in several rocks from Paleozoic to Lower Cretaceous, even though most were taken in pyroclastic jurassic rocks from El Quemado Complex. Paleostress tensors obtained are mostly strike-slip, although a 25% is normal and there are a few compresional.

The pattern of faults found is complex. In some sites the tensor can be locally linked to satellite images and observations from the field or be related to a major thrust front. There is no clear correlation between the age and/or lithology with the tensor since the youngest rocks measured are Lower Cretaceous. Probably there are several generations of family faults connected to different and recent tectonic phases then the paleostress tensors might correspond to the latest tectonic events.