



Multiscale tectonic analysis of the basement-involved Malargüe fold-and-thrust-belt, Northern Neuquén Basin, (Argentina).

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The Malargüe fold-and-thrust-belt (MFTB), which is located in the northern part of the Neuquén basin (Argentina), is known as a basement-involved orogenic wedge. The results presented here aim to make the link between the macroscopic structure and the strain record at both mesoscopic and microscopic scales (i.e damage). The cross-sections we produced show that basement contraction is strongly controlled by the extensive structural inheritance localizing deep seated thrusts. The second part of this work is dedicated to mesoscopic strain pattern analysis recorded by fracture networks. Throughout the MFTB, we are able to describe the occurrence of four main fractures sets emplaced in several stress regime that are linked (1) to the inheritance and (2) to the well-known compression phases from pre-folding to syn-folding settings. Finally the third part of this work describes the microscopic damage measured by the anisotropy of magnetic susceptibility. We evidence that there is no clear gradient of magnetic fabric intensity from foreland to hinterland, and that deformation is compartmentalized by structural inheritance and particularly by the localization of basement thrusts. This atypical pattern of magnetic fabrics succession reveals that the matrix damage is governed by the same strain distribution as those observed at macroscopic scale, thus providing a supplementary argument to consider the dynamics of the Andean system, at these latitudes, as singularly different from a classical Coulomb wedge propagation.