Structural evolution of key areas in rifts and orogens

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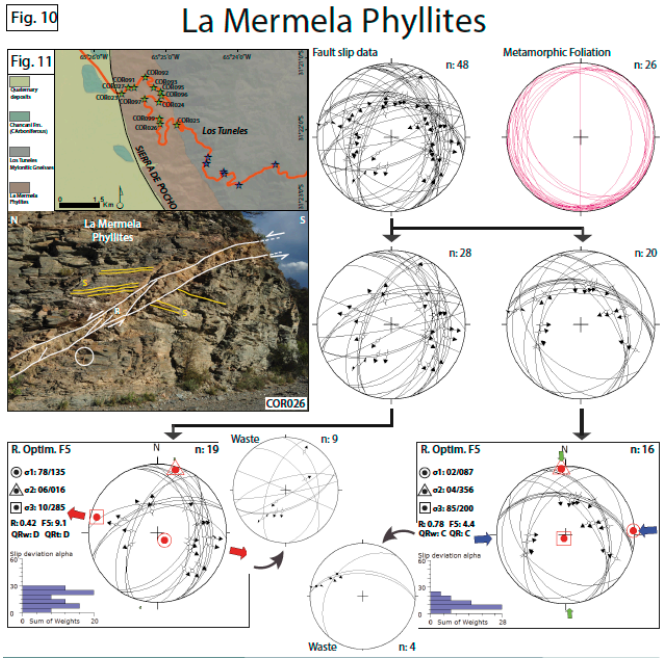
Tectonic analysis involves dynamic, kinematic and geometric analysis at the scale of a basin or orogenic belt. Integration of several methods from remote sensing to experimental data analyses allows a better comprehension of the structural evolution of an area, but the field observation remains an invaluable method.

Among the field data the determination of the paleostress tensors is an important tool to characterize successive tectonic episodes in brittle-deformed rocks and has been the object of a number of detailed studies. Several techniques have been developed to determine paleostress tensors based on signs of brittle deformation noticeable in the field (e.g., Angelier, 1989; Delvaux and Sperner, 2003; Yamaji, 2000; Melichar and Kernstockova, 2010).



Getting consistent category of stress states derived from different rock ages across different scales of space in the Earth's crust is a good argument for relating them to a common regional stress field. The consistent category of stress states has been attributed to the age of the youngest deformed rocks that has preserved the relevant fault-slip data. This information, together with a relative chronology of the crosscutting relationships, allows unravelling the successive tectonic events that have characterized an area.

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