



The onshore termination of the Valencia trough: a new map for a segment of the eastern Pre-Betics range

J. Zoethout (1), **Y. Kremer** (1), C. Gumiaux (2), J. Verges (3), R. Stephenson (1)

(1) Vrije Universiteit, Amsterdam, The Netherlands, (2) Université d'Orléans, Orléans, France, (3) Institut de Ciències de la Terra Jaume Almera, Barcelona, Spain

Contractual tectonics deformed the foreland of the Betic Cordillera, forming the Pre-Betic fold and thrust belt in eastern Spain during Early Miocene times. The Valencia Trough developed during the Late Oligocene and Early Miocene as a consequence of rifting in the Mediterranean, occurring along strike of the Pre-Betics and essentially at the same time. Thus, two distinct tectonic regimes related to western Mediterranean geodynamics apparently co-existed within a small distance of one another. In order to elucidate the structural relationships between these deformational regimes, especially with respect to timing of faulting, detailed mapping was carried out in the external Pre-Betics in an approximately 10 x 10 km region 60 km south of Valencia. Existing maps had focused on sediments and facies whereas the present work was focused more on structures, including the kinematics of fault displacements.

Three distinct sets of faults can be recognized as important in the new map: E-W orientated thrust faults, NNW-SSE normal faults, and NE-SW normal faults. The thrust faults are related to the formation of the external Pre-Betics, whereas the NNW-SSE normal faults, oblique to the strike of the Valencia Trough (NE-SW), can be assigned to an extensional system that is younger than the formation of the fold and thrust belt. The NNW-SSE normal faults are likely to have formed as a response to the topographic development of the Valencia Trough. The influence of these faults on the external Pre-Betics is limited; they do not occur more than 5 km west of the easternmost part of the Pre-Betics in this area.