



Vertical-axis rotation in East Kopet Dagh, NE Iran: Complex local folding kinematics or oroclinal bending?

Jonas B. Ruh (1), Elisabet Beamud Amorós (2), Aghajari Lotfollah (3), Gharabeigli Gholamreza (3), Luis Valero Montesa (1,4)

(1) ISTJA, CSIC, Barcelona, Spain (jruh@ictja.csic.es), (2) University of Barcelona, Paleomagnetic Laboratory CCiTUB - ICTJA CSIC, (3) National Iranian Oil Company, Tehran, Iran, (4) Departament de Geologia, Universitat Autònoma de Barcelona, Bellaterra, Spain

The northern border of today Iran roughly marks the location of the formerly closed Paleo-tethys suture zone. The closure of the Neo-tethys further to the south, stress dispersion towards the north, and tectonic reactivation along the Paleo-tethys suture lead to the formation of the Greater Caucasus, the Alborz, and the Kopet Dagh mountains during the Cenozoic. The large-scale structural evolution of these mountain belts has been strongly affected by the indentation of the South Caspian Basin, which mechanically acts as a rigid block. In particular, it has been proposed that the Kopet Dagh and the East Alborz had undergone oroclinal bending due to the South Caspian Basin rigid block indentation, resulting in anti-clockwise vertical-axis rotation in the West, and clockwise vertical-axis rotation in the East Kopet Dagh, respectively.

Whereas vertical-axis rotation measurements exist for the Alborz mountains, there is a lack of data from the Kopet Dagh. Here, we present paleomagnetic directions and magnetic fabric deduced from anisotropy of magnetic susceptibility (AMS) measurements from several sites around the Kalat syncline along the northern mountain front of the East Kopet Dagh. Preliminary results of vertical-axis rotations rather indicate complex multi-phase folding evolution than large-scale oroclinal bending.