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Complex local folding kinematics in western Kopet Dagh derived from vertical-axis rotation

Luis Valero (1), Jaume Albareda (1), Albert Cusidó (1), Elisabet Beamud (2), Lotfollah Aghajari (3), Gholamreza Gharabeigli (3), Ali Mohammadi (4), and Jonas B. Ruh (5)

(1) Universitat Autònoma de Barcelona, Department of Geology, Spain (luis.valero@uab.cat), (2) University of Barcelona, Paleomagnetic Laboratory CCiTUB at ICTJA – CSIC, Barcelona, Spain, (3) National Iranian Oil Company, Terhan, Iran, (4) Geological Survey of Iran, Tabriz, Iran, (5) ETH, Zurich, Switzerland

In northeast Iran, the suture zone of the Paleotethys is situated between the East Alborz Mountains to its south and the Kopet Dagh Mountains to its north. Both mountain belts represent large-scale oroclines, potentially resulting from the indentation of the quasi-rigid South Caspian Basin. The oroclinal shape of the Alborz Mountains has been associated with vertical-axis rotation based on paleomagnetic data. However, no evidence for rotation has been found in the northeastern Kopet Dagh. A plausible scenario is that most of the rotation in the Kopet Dagh has been absorbed along its western part. Here, we present results of vertical-axis rotation and anisotropy of the magnetic susceptibility (AMS) for sites located in the West Kopet Dagh. AMS data range from sedimentary to tectonic fabrics depending on the position with respect to local thrusts. Magnetic vectors do not show significant vertical-axis rotation, implying that no significant rotation took place since Cretaceous times in the western Kopet Dagh. A preliminary comparison of these results with previous data from East Kopet Dagh favours complex local folding kinematics for most of the Kopet Dagh rather than significant vertical-axis rotation.