



Tectonic history of the MahiRud (Cheshme-ostad) complex according to new structural data, East of Iran

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Abstract

The Mahirud (Cheshme-ostad) volcano-plutonic complex is located in the northeastern part of the Sistan suture zone, eastern Iran. The igneous part occur as lava and pyroclastic rocks consists andesitic basalt, andesite, and rhyolite and has been intruded by upper Cretaceous tonalitic stock. Mahirud complex belonging to a tectonic setting similar to a recent Island arcs. Structural studies on sedimentary rocks which overlies the complex shows three deformational phases; first phase or D1 was happened before Afghan-Lut collision and coeval to subduction and accretion of the Mahirud Island-arc to the active margin of the Afghan block. The axial plane of the folds generated by this phase have an east-west direction in general, and associated with the thrust with sloping to the north. Second deformational phase or D2 is a syn-collision event. The previous folds were refolded in a new trend of north-south; the resulted structure appeared in Ramsay's interference fold pattern type I. The last deformational phase, D3, is a post-collision compressional event can be seen in form of conjugate strike-slip faults transected previous structures. we must expect to have a larger ocean much wider than what was already proposed for the Sistan Ocean as a narrow oceanic seaway. So the Continental rifting theory in east of Iran contradicts with the structural and petrological evidence of the study area.

The theory of the occurrence of continental dichotomy in eastern Iran

Keywords : Deformation, Interference fold, Cheshmeh-Ostad, Sistan suture zone, Neo Tethys.