



۲۳ و ۲۴ آبان ماه ۱۳۹۷
Qom, 14-15 Nov., 2018
دانشگاه پیام نور قم



Systematic variations in the intensity of deformation in the Hinterland of the Zagros Orogenic Belt, Iran

Mohammad Ali Ghanbarian*. Marziyeh Khalili . Morteza Sadeghi Mazidi

Department of Earth Sciences, College of Sciences, Shiraz University, Shiraz, Iran

*Corresponding author. E-mail address: maghanbarian@shirazu.ac.ir (M.A. Ghanbarian)

Telfax: +98 71 32284572

Abstract The Zagros orogen is an important collisional belt in the central part of the Alpine-Himalayan orogenic chain between the southern margin of the Iranian continent and the northern margin of the Arabian plate. One of the main discrepancies about this collisional belt is the location and number of suture zones between the Iranian and the Afro-Arabian continents. In this study, different structures comprising thrust, strike-slip and normal faults, macroscopic and mesoscopic folds, first- to fourth-order duplex structures, foliations and shear zones and the structures within them, have been considered to gather evidence about the variation in the intensity of deformation in the Zagros Hinterland Fold-and-Thrust Belt (ZHFTB). This study shows a systematic increase in deformation intensity toward the SW of the ZHFTB which is incompatible with the hypothesis of the existence of one main suture zone in the NE of the ZHFTB (i.e. the NE of the Sanandaj-Sirjan Zone).

Key words Tectonic influence, deformation intensity, Eurasia-Gondwana Suture Zone, Zagros Suture Zone, Zagros orogenic belt, Sanandaj-Sirjan Zone

The existence of the valuable hydrocarbon reservoirs made the Zagros orogenic belt one of the most famous regions of the world. The formation of this belt is the result of the closure of the Neo-Tethys ocean and the subsequent collision of the Afro-Arabian plate with the southern margin of the Iranian continent (Paul et al. 2006). Different geological aspects of the Zagros collisional belt have been intensively investigated (e.g. Alavi 1994, 2004, 2007; Mohajjel and Fergusson 2000, 2014; Blanc et al. 2003; Mohajjel et al. 2003; McQuarrie 2004; Regard et al. 2004; Sherkati and Letouzey 2004; Agard et al. 2005, 2006, 2011; Molinaro et al. 2005 a, b; Mouthereau et al. 2006, 2007; Paul et al. 2006, 2010; Sarkarinejad and Azizi 2008; Vergés et al. 2011; Ghanbarian 2016; Malekzade et al. 2016) but one of the remaining principal discrepancies about this significant belt is the location and number of suture zones. The suture zones of the Zagros are very important as this belt is one of the most important belts which is located between Eurasia and Gondwana. Some geologists suggested one main suture is located in the SW of the Sanandaj-Sirjan Zone (SSZ) at the present location of the Neyriz ophiolite (Fig. 1a) to the Kermanshah ophiolite (e.g. Berberian and King 1981; Berberian 1983; Mohajjel et al. 2003; Agard et al. 2005, 2006, 2011; Sheikholeslami et al. 2008; Vergés et al. 2011; Mohajjel and Fergusson 2014). Some other geologists propose one main suture that is located between NE of the