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First evaluation of the present day strike-slip rate on the Kazerun fault system in the Zagros (Iran)

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The Kazerun fault system is a major north-south trending tectonic feature separating two distinct parts of the Zagros mountain belt, the North and the Central Zagros. North Zagros is the narrower and higher part, while in Central Zagros the folding is more widely spread. While folding is oblique in North Zagros, the Central Zagros folding is perpendicular to the direction of Arabia-Eurasia shortening. GPS measurements indicate pure shortening in Central Zagros, concentrated in the southern part close to the Persian Golf. In North Zagros, some evidence is found for strain partitioning with distributed shortening perpendicular to the mountain axis, and more localized strike-slip motion on the Main Recent fault (MRF) and the Dezful Embayment fault (DEF). The seismicity on the Kazerun fault system in the transition zone between these two parts of Zagros emphasizes the major role Kazerun is playing in Zagros kinematics. Two GPS measurements on a dedicated network around the Kazerun fault system provide first velocity estimates on the different segments. They are evaluated to 2 - 4 mm/yr dextral strike-slip from north to south. Some dextral strike-slip activity can also be stated on the NNW-SSE trending Kareh-Bas fault east of Kazerun. However, no present day deformation has been observed on the Main Zagros Reverse fault (MZRF) in the region north of the Kazerun fault.