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Active Tectonics in the Zagros Mountain Belt, Iran

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The Zagros Mountain Belt along the northeastern margin of the Arabian Plate extends for about 1500 km from the southeast of Turkey to the Strait of Hormuz in the Persian Gulf. It has a wave-like, sinuous plan shape and an asymmetric, step-like, southwestward dipping topography. The Arabian plate was originally a part of the great African plate. Its separation from the African Plate, since the Late Miocene time, because of the northwestward propagation of the sea-floor spreading in the Arabian Sea, resulted in not only the opening of Red Sea between them but also the anticlockwise, rotational motion of the Arabian plate and its collision with the Central Iranian plate, the creation of Zagros Mountain Belt and the continuous seismotectonic activity within the belt. The results of studies show that, the creation of Zagros Mountain Belt, has taken place mainly because of the detachment of its sedimentary cover from the igneous, basement rocks and its deformation by both serial folding and serial faulting processes that have initiated in the collision zone, along the northeastern margin of the belt, and gradually migrated to the southwest. The results of studies also show that, due to the continuation of opening process in the Red Sea and the anticlockwise rotational motion of the Arabian plate towards the Central Iranian plate until the present time, the morphotectonic evolution of the Zagros Mountain Belt, still is in progress, and it is manifested mainly by the current amplification of folds and co-seismic reactivation of faults. But, due to the anticlockwise, rotational motion of the Arabian Plate the rate of fold amplification and the number of earthquakes within the belt increases from the NW to SE and from the NE to SW. Keywords: Zagros; Mountains; Folds; Faults; Earthquakes.