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Geometry and Kinematics Analysis of Structures of Touye Darvar Region (Southwest of Damghan)

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In the Touye area, located in the eastern part of the Alborz region, the strikes of structures are almost northeast-southwest. Although the rows of sediments in the Touye Darvar region are from the old to the new, they have never been regular and the tectonics activities have made them disturbed or eliminated. For instance, the discontinuity between the Geirud and Elika formations and the lack of Permian sequences can be noticed which are indicative of tectonics activities. Regarding to the evidences, it was found that the faults of Astaneh and Touye darvar with explicit activity in Quaternary have played a major role in the development of the region. In this area there are the over thrust faults owning normal and strike that cause the area to be tectonically active. These thrusts have been associated with major deformations, leading to appropriately fault detection and the existence of the Gholghol springs (located in northwest of Damghan) are also evidence of multiple faults in the area. No reports were found about the existence of an altered layer in the region. According to the contact of the Elika and Shemshak Formations, this orogeny can be created due to the collision in the late Triassic. The Elika and Girud formations have been transmitted to the Shemshak Formation due to the corrosion fault. The evidence of this transition are the fossils and dolomitic parts that are observed unshakably in the Shemshak, displaced by transverse faults. The presence of slickenside, fault grooves and fault breccia are the evidences for the existence of faults in the region.