






Seismic Activity and Tectonics of Sirnak Region in Turkey

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ABSTRACT

The Sirnak region is located in Turkey near the borders of Iraq and Syria on the Arabian Plate's northeastern border. Since the district includes Silopi Town Center, its seismic influence may affect our areas, making this area crucial to research. The International Seismological Center (ISC) moment tensor method is used to analyze the solutions of the focal mechanisms of four earthquakes within the study area. The seismic magnitude ranges from 4.8 to 5.8, but these solutions were not close to the proposed fault, so we relied mainly on morphotectonic analysis of satellite images using techniques (GIS), Landsat 8 and 9 to estimate the type of fault and determine its direction, which is of a strike-slip-lift type. As for the three seismic catalogs, ISC, European-Mediterranean Seismological Center (EMSC), and Kandilli Observatory and Earthquake Research Institute (KOERI), they are used for the purpose of obtaining seismic records about the Sirnak region for the past ten years (2010-2020) to study the seismic history of the region during this decade, which proved that there was a fault (Fig. 3 called the Şirnak Fault. It is an active and small fault, but it is not marked on maps. It is worth noting that the study area has many faults. However, the majority of the active faults in eastern Turkey are left-lateral or sinistral strike-slip faults that were identified following significant earthquakes, with few thrust fault lines, except for the Bitlis Suture Zone, the Silop, and the Cizre Faults.

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