SEISMOTECTONIC EVALUATION OF THE EARTHQUAKE DATED AT 12 NOV.2017 AT IRAQI-IRANIAN BORDER

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ABSTRACT

The northern east areas of Iraq consider as one of the most important areas geologically, because these areas have different geological structures with very complicated morphology and because also situated near to Zagros Thrust belt (collision zone between Arabian and Eurasian plates). Therefore, these areas are very active seismically and tectonically (Jassim & Goff, 2006). From this point this study has been focused on the geological interpretation and seismotectonic analysis of the last major earthquake at the Iraqi-Iranian border near to Halabja town\Iraq. According to that, a seismotectonic analysis has been conducted for the earthquake dated in (12 Nov 2017) and its epicenter located at the geographical coordinate (34.902°N/45.952°E) with a magnitude (7.3) at depth (19 km). The purpose of this study is to explain the sources and reasons of this earthquake and to determine the geological structures (fault), which is the the seismic activity released on it to produce this earthquake. This study refer to Mountain Front Fault (MFF) as a surface plane for this seismic activity, because this fault considers as one of most effective fault in loristan promontory within Zagros zone. This study refer to the reason of the majority of this earthquake, and why the shaking intensity of this earthquake was strong. Remote sensing data, USGS, GFZ, and other international seismological institutions data have been used as database in this study to locate the earthquakes epicenters in the study area and to prepare morphotectonic analysis of the earthquake source and the mechanism of this earthquake. As a final result a tectonic model has been produced to demonstrate the source and the mechanism of the tectonic activity for this earthquake.

Keywords: *Earthquake, seismotectonic, Iraq-Iran border, Zagros, fault*