

## Seismicity and Source Parameter of Some Events in Abu Dabbab Area, Red Sea Coast

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**Abstract :** Prior to 12 November 1955, no earthquakes have been reported from the Abu Dabbab area in the International Seismological Center catalogue (ISC). The largest earthquake in Abu Dabbab area occurred on November 12, 1955 with magnitude Mb 6.0. The closest station from the epicenter was at Helwan (about 700 km to the north), so the depth of this event is not constrained and no foreshocks or aftershocks were recorded. Two other earthquakes of magnitude Mb 4.5 and 5.2 took place in the same area on March 02, 1982 and July 02, 1984, respectively. Since the installation of Aswan Seismic Network stations in 1982, (250-300 km to the south-west of Abu Dabbab area) then the Egyptian National Seismic Network stations, it was possible to record some activity from Abu Dabbab area. The recorded earthquakes at Abu Dabbab area as recorded from 1982 to 2014 shows that the earthquake epicenters are distributed in the same direction of the main trends of the faults in the area, which is parallel to the Red Sea coast. The spectral analysis was made for some earthquakes. The source parameters, seismic moment ( $M_0$ ), source dimension ( $r$ ), stress drop ( $\Delta\delta$ ), and apparent stress ( $\delta$ ) are determined for these events. The spectral analysis technique was completed using MAG software program.

**Keywords :** Abu Dabbab, seismicity, seismic moment, source parameter

**Conference Title :** ICESE 2016 : International Conference on Earthquake and Structural Engineering

**Conference Location :** Jeddah, Saudi Arabia

**Conference Dates :** January 26-27, 2016