

Seismic Active Zones and Mechanism of Earthquakes in Northern Egypt

Authors : Awad Hassoup, Sayed Abdallah, Mohamed Dahy

Abstract : Northern Egypt is known to be seismically active from the past several thousand years, based on the historical records and documents of eyewitnesses on one- hand and instrumental records on the other hand. Instrumental, historical and pre- historical seismicity data indicate that large destructive earthquakes have occurred quite frequently in the investigated area. The interaction of the African, Arabian, Eurasian plates and Sinai sub-plate is the main factor behind the seismicity of northern part of Egypt. All earthquakes occur at shallow depth and are concentrated at four seismic zones, these zones including the Gulfs of Suez and Aqaba, around the entrance of the Gulf of Suez and the fourth one is located at the south- west of great Cairo (Dahshour area). The seismicity map of the previous zones shows that the activity is coincide with the major tectonic trends of the Suez rift, Aqaba rift with their connection with the great rift system of the Red Sea and Gulf of Suez- Cairo- Alexandria trend. On the other hand, the focal mechanisms of some earthquakes occurred inside the studied area and having small to moderate size show a variety of patterns. The most predominant type is normal faulting.

Keywords : Northern Egypt, seismic active zone, seismicity, focal mechanism

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