

## **Seismicity re-evaluation of the northern Red Sea**

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**SUMMARY** : The Aqaba subnetwork of five vertical short-period stations of the seismological observatory of King Saud University was installed in late 1986 along the eastern side of the Gulf of Aqaba, northern Red Sea. During the first six years (1986 August to 1992 July) of the subnetwork operation, 400 microearthquakes were detected. Of these, 93 events were recorded by most of the subnet stations and were located. Their epicentres lie in the northern part of the Red Sea between latitudes 25.5 °N and 27.5 °N and longitudes 33.5°E and 36 °E along the axial depression of the Red Sea where the large intrusions (deeps) are located. Magnitudes of the locatable events ranged from 2.1 to 4.8. Two intensive swarms of about 200 microearthquakes occurred in February and June of 1992. The February swarm is the first intensive sequence observed in the surveying area since the establishment of the KSU network. Frequency-magnitude analysis of the recorded events for the period 1986-1992 yielded 3.543 for *a* and 0.658 for *b*. These relatively higher *b* values (0.658) are a good indication of the crustal heterogeneity under the spreading zone of the northern Red Sea. USGS and KSU data together show 3.41 for *a* and 0.49 for *b*. This study, together with historical data, confirms that the area is very seismically active and that the activity is mainly of swarm type, and may be attributed to the subsurface magmatic activity and spreading centres that are usually associated with strike-slip and normal faulting, respectively.

**Key words:** earthquake, N Red Sea, seismicity.