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Mid-Oceanic Ridge type of seismicity all along the axial trough of the Red Sea

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Some 83% of the seismic moment of the instrumental seismicity of the Red Sea between latitude 13°N and 28°N is associated with earthquakes epicentered along its axial trough. Most of these have occurred in the form of sequences and swarms and are believed to be volcanic related. Some 16.1% and 92.7% of its seismic moment are associated with earthquakes shallower than 10km and 40 km respectively, which indicate that lithospheric deformations beneath this trough are acting partially within the crust and largely within the underlying uppermost mantle. The seismicity appears to slightly deeper beneath the northern part where 98% of the energy is released from depths ≥ 30.1 km, while only 72.1% of the energy is released from depths ≥ 20.1 km beneath the southern part. Some 62% and 99% of the seismicity of the axial trough had magnitudes less than 4 and 6 respectively. Only 8 earthquakes had magnitudes 6 – 6.9, not less than 4 of these are epicentered along the NE trending strike-slip faults. Calculated b-values for the whole length of the axial trough and the NE trending strike-slip faults are 1.02 – 1.08 and 1.26 – 1.4 respectively. Such seismological characteristics are comparable with those of the crests and strike-slip faults of mid-oceanic ridges. These may be taken together with the previously published bathymetric, heat flow, gravity, magnetic and seismic results to conclude that the axial trough all along the Red Sea appears similar to that of typical well-developed mid-ocean ridges.