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seismicity along the the Davie Ridge/Fracture zone

Davie Ridge/Fracture Zone, considered as the seaward extension of eastern branch (Kenya Rift Valley) of the East African Rift System (Mougenot et al., 1986), is a 2200 km-long prominent relic fracture zone that cuts across the West Somali Basin (Coffin and Rabinowitz, 1987, 1988; Grimison and Chen, 1988). It ranges between 30 and 120 km wide, with a west-facing scarp along the lower half of its length, that rises as much as 2300 meters above the sea floor (Scrutton, 1978; Mougenot et al., 1986). Earthquakes as deep as 40 km have been recorded below Davie Ridge (Grimison and Chen, 1988). However, evaluation of recent seismic data for the purpose of this study shows that M ≥ 5.0 earthquakes at relatively shallow depths of 10 - 30 km are a common occurrence along the Davie Ridge in the Mozambique channel. The earthquake focal mechanism indicates that the Davie ridge is characterized by normal faulting with occasional obligue faulting. Since early 2018 through 2019, the Davie ridge has been characterized by high frequency of earthquakes occurrence. This paper presents a review of these earthquakes and their implications on the stress changes along the Davie ridge/fracture zone.

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