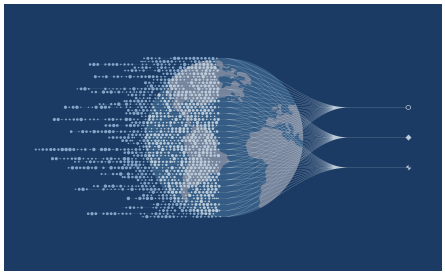

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-AFTERSHOCKS SEQUENCES IN DISTINGUISHING ANTHROPOGENIC AND NATURAL QUAKES: CASE STUDY TURKANA RIFT, EAST AFRICA

The volcanically and seismically active Main Ethiopian and East African (Kenya) rifts are linked in a complex zone within the Turkana Depression bounded by the Ethiopian plateau to the north and East African plateau to the south. Subsurface imaging beneath Lake Turkana and surrounding sub-parallel basins reveals multiple half-graben basins bounded by N-S striking normal faults. The objective of the study is to use the mainshock-aftershock sequence to distinguish anthropogenic and natural quakes. Data from 22 stations recorded on 3 May 2020, Mb4.9 event and its aftershocks. The data was processed using SEISAN software. The absolute locations of the events were improved using HypoDD double difference algorithm. Three maximum likelihood estimates (MLEs) parameter values (c, p & K0) describing Omori's law of decay rate were determined by AFTPOI program while four parameter values (c, p, K0 & α) describing the statistical model MLEs were determined by ETAS program. A magnitude of completeness, Mc, of 1.62 and b-value = 1.33 ±0.24 for the sequence were determined. The ETAS model parameter values were c=0.0007, p=0.7071, K (0) =1.5361 & α=1.217. The decay rate is not clear, as expected in quakes of this nature, due to the low population of events.

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