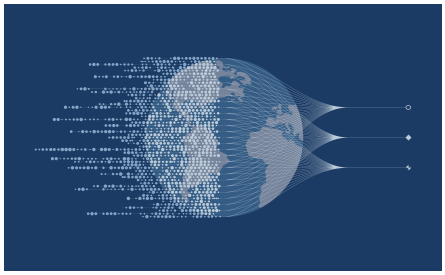

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new Seismicity map for Kenya (1895 to 2020) and its implications for hazard

A new seismicity map for Kenya is compiled from nineteen catalogs with 7,726 events spanning 1895 to 2020. The magnitude ranges from Mw 2.5 to 7.0 and a b-value of 0.60, for three magnitudes of completeness (Mc) 3.1, 4.0, and 4.8. The seismicity reveals a complex and dense seismic activity across Kenya, where the South Kenya Rift and the Nyanza Rift have the highest seismicity trending north-south and northeast-southwest. Away from the rift, the seismic is diffuse. The Kenya dome serves as an axial divide. The volcanic zones exhibit significant seismicity close to and near the tertiary volcanic, e.g. Chyulu Hills and Mt. Kilimanjaro, with seismic trends aligning northwest-southeast and northeast-southwest. The map suggests the presence of a magmatic body patched around the Kenya Dome, the Kenya Rift, and associated volcanic centers. The low b-value indicates an incomplete dataset, common in active tectonic regions. This new seismicity map represents the most comprehensive coverage and provides valuable input for seismic hazard assessments. The Seismicity suggests moderate activity, which correlates to moderate hazard levels. Keywords: seismicity, seismicity distribution patterns, implication to hazard.

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