



Seismotectonics and crustal deformation in Africa

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We present the Seismotectonic Map of Africa based on a geological, geophysical and geodetic database including the instrumental seismicity and re-appraisal of large historical events, and harmonization and homogenization of earthquake parameters in catalogues. Although the seismotectonic framework of the African continent is a difficult task, several previous and ongoing projects provide a wealth of data and outstanding results. The database of large and moderate earthquakes in different geological domains includes the coseismic and Quaternary faulting that reveals the complex nature of the active tectonics in Africa. The map benefits from previous works on local and regional seismotectonic maps that needed to be integrated with the lithospheric and upper mantle structures, seismic anisotropy tomography and gravity anomaly, into a continental framework. The synthesis of earthquake and volcanic studies obtained from the analysis of late Quaternary faulting and geodetic data will serve as a basis for hazard calculations and the reduction of seismic risks. The map will be useful for the seismic hazard assessment and earthquake risk mitigation for significant infrastructures and their socio-economic implications in Africa. The constant population increase and infrastructure growth in the continent that exacerbate the earthquake risk justify the necessity for a continuous updating of this map.

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