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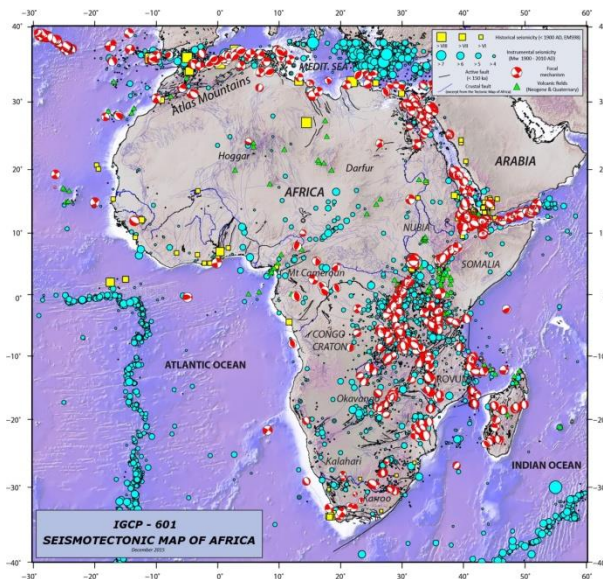
The Seismotectonic Map of Africa

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We present the Seismotectonic Map of Africa [1] based on a geological, geophysical and geodetic database including the instrumental seismicity and re-appraisal of large historical events with harmonization and homogenization of earthquake parameters in catalogues. Although the seismotectonic framework and mapping 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 database and related map are prepared in the framework of the IGC Project-601 “Seismotectonics and Seismic Hazards in Africa” of UNESCO-IUGS, funded by the Swedish International Development Agency and UNESCO-Nairobi for a period of 4 years (2011 – 2014), extended to 2016. The map project is also supported by the Organisation of African Geological Surveys (OAGS), the International Union of Geological Sciences, the North African Group for Earthquake and Tsunami Studies (NAGET), and the Geological Society of Africa.

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The map also benefits from previous works on local and regional seismotectonic maps that needed to be integrated with the lithospheric and upper mantle structures from tomographic anisotropy and gravity anomaly into a continental framework.

Figure 1: The seismotectonic map of Africa. The map background topography and bathymetry is from GEBCO on behalf of IOC and IHO, 2003.

Website:

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<http://eost.u-strasbg.fr/igcp601/index.html>

The synthesis of earthquake and volcanic studies with the analysis of long-term (late Quaternary) and short-term (last decades and centuries) active deformation observed with geodetic and other approaches presented along with the seismotectonic map serves as a basis for hazard calculations and the reduction of seismic risks. The map may also be very useful in the assessment of seismic hazard and mitigation of earthquake risk for significant infrastructures and their implications in the socio-economic impact in Africa. In addition, the constant population increase and infrastructure growth in the continent that exacerbate the earthquake risk justify the necessity of updating the seismotectonic map.

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References:

[1] Meghraoui M. and the IGCP-601 Working Group (2016) Episodes (in revision)

