An earthquake catalogue (2200 B.C. to 2013) for seismotectonic and seismic hazard assessment studies in Egypt

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Abstract:

Of all natural hazards, earthquakes are those which historically have caused the most extensive impact and disruption in terms of damage to infrastructure, human-casualties and economic losses. They are the expression of a continuing evolution of the Earth Planet and a reshaping of the Earth's surface. They are the most deadly of all natural disasters affecting the human environment. Every year more than one million earthquakes shake different regions of the world, some so feeling and gentle that only the most sensitive instruments can detect the motion, and others so violent that whole communities are shattered and large sections of terrain are shifted in this process that can start landslides, block rivers, causefloods, and set massive sea waves surging across the oceans. The amount of damage and number of fatalities at a certain location caused by an earthquake depends on various factors: the magnitude and characteristics of the earthquake focus, distance from the epicenter, soil characteristics, density of buildings and population, and structural design of buildings and infrastructures, among others. These facts are playing an important role in decreasing or increasing the number of victims in recent earthquakes, especially in the developing countries. The increasing population in the earthquake-prone cities, poor construction quality and lack of building code enforcement are major reasons why the vulnerability due to earthquake is also increasing.

Keywords:

Earthquake catalogue, seismic hazard, seismotectonics, focal mechanism, Egypt

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