



Seismicity and seismotectonics of southern Ghana: lessons for seismic hazard mitigation

Paulina Amponsah

National Nuclear Research Institute, Ghana Atomic Energy Commission, Legon- Accra, Ghana

Ghana is located on the West African craton and is far from the major earthquake zone of the world. It is therefore largely considered a stable region. However, the southern part of the country is seismically active. Records of damaging earthquakes in Ghana date as far back as 1615. A study on the microseismic activity in southern Ghana shows that the seismic activity is linked with active faulting between the east-west trending Coastal boundary fault and a northeast-southwest trending Akwapim fault zone. Epicentres of most of the earthquakes have been located close to the area where the two major faults intersect. This can be related to the level of activity of the faults. Some of the epicentres have been located offshore and can be associated with the level of activity of the coastal boundary fault. A review of the geological and instrumental recordings of earthquakes in Ghana show that earthquakes have occurred in the past and are still liable to occur within the vicinity of the intersection of the Akwapim fault zone and the Coastal boundary fault. Data from both historical and instrumental records indicate that the most seismically active areas in Ghana are the west of Accra, where the Akwapim fault zone and the Coastal boundary fault intersect. There are numerous minor faults in the intersection area between the Akwapim fault zone and the Coastal boundary fault. This mosaic of faults has a major implication for seismic activity in the area. Earthquake disaster mitigation measures are being put in place in recent times to reduce the impact of any major event that may occur in the country. The National Disaster Management Organization has come out with a building guide to assist in the mitigation effort of earthquake disasters and floods in the country. The building guide clearly stipulates the kind of material to be used, the proportion, what should go into the foundation for one or two storey building, the electrical materials to be used and many others.