



## **Recent seismicity of the southwestern Ethiopian rift and implication for earthquake and volcanic risk**

Atalay Ayele

Institute of Geophysics Space Science and astronomy, Addis Ababa University, Addis Ababa, Ethiopia

The southwestern part of the Ethiopian rift is one of the most seismically and volcanically active tectonic units in East Africa. Notable seismic events have occurred in 2010 and 2011 in Hosanna and Yirgalem, respectively. The main shock of the Hosanna event occurred on December 19, 2010 with magnitude 5.2 mb and was located 15-20 km northwest of the town. It caused significant damage on several buildings in Hosanna and the shaking was felt from Mizan town in the south as far as Addis Ababa in the north. Damages on buildings were sever in walls facing east and west which is sub-parallel to the extension direction of the main Ethiopian rift. Patients rushed out unconsciously from hospitals in Hosanna but luckily no damage on human life was reported. It was also strongly felt in Jimma town and students from Jimma University accommodated at higher floors of the residence buildings were terrified and rushing down where it caused injuries of over 26 students during that event. The seismic activity continued for over a year.

The Yirgalem earthquake occurred on March 19, 2011 with magnitude 5.1 mb close to a highly populated area near Yirgalem town and it was widely felt in the area but there was no significant damage except demolishing of loosely plastered walls. The feeling of the residents was complicated by their perception on the famous Tohuku earthquake of March 11, 2011 that occurred a week before and the associated disaster which was widely televised all over the world. Seismologists and geophysicists from Addis Ababa University had to go to the site to make presentations and make some outreach campaigns that saved thousands of residents from fleeing the area.

These recent seismic activities in the highly populated main Ethiopian rift were a warning call both for the construction industry and decision makers to create awareness so as to save human life and property from eminent earthquake disasters. This recent seismic activity in southwestern Ethiopia sheds light on the possible connection of the main Ethiopian rift in the north to the eastern branch of the East African Rift System.