ID: Type: **Poster**

# of Major Earthquakes Using 4-D Seismic Attenuation Tomography

The crucial loss amplitude of seismic waves is attributed to the anelasticity that known as the intrinsic attenuation in comparing to scattering, geometrical spreading and the other amplitude effects. The tectonic driven forces cause accumulation stress in time along the fault region which followed by changes in the elasticity properties of the media until reaching the failure point and the energy released in the form of seismic waves that caused vital earthquake hazards. The attenuation tomography has been used successfully to scale the anelastic anomalies in high resolution 3-D image. This research aims to develop a novel technique to predict major earthquakes using 4-D seismic attenuation tomography based on measuring the changes in 3-D attenuation over interval-time scale to detect the rate of changes in the anelasticity within the seismic source zones of major earthquakes. Local, dense and well configured seismic array records will be used with high accuracy data processing tools to detect any variation in the attenuation values along the interval time. The developed novel technique expected to use the 4-D attenuation tomography as a measurable tool for strain changes due to stress accumulation along the active fault zones to predict major earthquakes.

Primary author: FERGANY, Elsayed (National Research Institute of Astronomy and Geophysics (NRIAG))

Presenter: FERGANY, Elsayed (National Research Institute of Astronomy and Geophysics (NRIAG))

Track Classification: Theme 5. CTBT in a Global Context