

Seismicity in Central Myanmar Basin and Regional Tensional Stress

Hla Hla Aung

Myanmar Earthquake Committee
MES, MES Building, Hlaing University Campus,
Hlaing Township, Yangon, Myanmar
Email: hhlauung@gmail.com

A broad zone of linear crust along the Central Myanmar Basin and Central Andaman Basin is bounded on the west by the northward moving India plate and on the east by southeastward extruding Indochina plate. The region in between these two plates has been undergoing two tectonic deformations: NNW-SSE oriented extensional scheme in the Miocene and then compression in the Pliocene-Pleistocene. Extension accommodates the development of pull-apart basins and uplifts, where pull-apart basin become deposition centers for sediments and uplifted area become sediment source area. Due to this on-going processes, the crustal blocks are broken loose along the bounding faults and rotating and translating laterally towards north along the Sagaing transform fault, accommodating vertical displacement between adjacent basins. In such continental rift region, shallow focus tensional events are associated with rifting where earthquakes are generally confined to the uppermost 12-15 km of oceanic crust and 70 km in continental crust, defining the seismogenic layer underneath. In Central Myanmar Basin, all the historical earthquake records and recent seismic activity obtained from USGS Earthquake Catalog are generally shallow and are closely related to the major faults trending generally in N-S, NE-SW, NW-SE direction, formed by ductile extension in oceanic crust. Seismicity provides information on active deformation in this area. Due to this extensional deformation, Central Myanmar Basin is still under regional tensional stress and has not attained its final stage of equilibrium. Movements along these faults have not yet ceased as indicated by the frequent occurrence of earthquakes in all this area.

Key words: seismicity, tension, stress, extension, compression, displacement, continental crust, equilibrium