REGIONAL VARIATION OF AFTERSHOCK AND SWARM ACTIVITIES IN PENINSULAR INDIA

Buddha Ramalingeswara Rao[1] S. Karimulla Basha1[1], A. Pandey[2]
[1]*National Geophysical Research Institute, Hyderabad, India*
[2]*India Meteorologocal Department*

Available data of earthquakes with aftershock activity on the one hand and micro-earthquake data of swarms from different parts of Peninsular India on the other hand from 1952 onwards has been considered to know about characterization of seismic hazard of the regions. According to Mogi's (1967) models I, II and III, the great variation in regional aftershock activity, foreshock-mainshock and aftershock, and swarm activities respectively, indicate its nature of the fracturing, mechanical property of the crustal medium and thereby the distribution of stress prevailing in the fault zones. Considerable degrees of association of major earthquake occurrences in the rifts zones like Narmada-Son and Kutch will generate in and around the precursory swarms. These swarms will occur in 1-4 km thick upper crustal layer with maximum magnitude < M4.0. The difference of magnitude of mainshock (M0) and the largest aftershock magnitude (M1) of aftershocks (Mogi model I), foreshock-mainshock and aftershock(Mogi Model II, and swarm (Mogi Model III) verses their depths plotted and are found to be fall within crustal thickness of 13km. for the south Indian shield. The values of shallow earthquakes of (M0-M1) indicate as measure of aftershock activity in the region. The spatial distributions of the values of (M0-M1) have been indicating low-to high which can be classified the regional aftershock seismic activities 0.1-0.3, 0.31- 0.5, 0.51-1.5 and 1.51-2.0 as zone II, zone III, zone IV and Zone V respectively. Further, the spatial distributions 'p', 'b' and aftershock duration have also been studied along with vertical crustal movements' by using GPS data.