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Short Communication

Ground motion parameters in Shillong and Mikir Plateau supplemented by mapping of amplification factors in Guwahati City, Northeastern India

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Abstract

Ground motion parameters for Shillong–Mikir Plateau of Northeastern India are examined. Empirical relations are obtained for ground motions as a function of earthquake magnitude, fault type, source depth, velocity characterization of medium and distance. Correlation between ground motion parameters and characteristics of seismogenic zones are established. Simultaneously, new empirical relations are derived for attenuation of ground motion amplitudes. Correlation coefficients of the attenuation relations depend on the site classifications that are identified based on average shear wave velocity and site response factors. The attenuation relation estimated for logarithmic width of Mikir Plateau found to be a little bit higher than that of Shillong Plateau both for soft and hard ground

which accounts for geometrical spreading and anelastic attenuation. Simultaneously, validation are made studying the seismic microzonation process related to geomorphological, geological subsurface features for thickly populated Guwahati city of India under threat from scenario earthquake.

Keywords: Ground acceleration; Predominant period; Shaking duration; Response spectra

Article Outline

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