



Site-specific Probabilistic Seismic Hazard Map of Himachal Pradesh, India. Part II. Hazard Estimation

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A b s t r a c t

This article presents site-specific probable seismic hazard of the Himachal Pradesh province, situated in a seismically active region of northwest Himalaya, using the ground motion relations presented in a companion article. Seismic recurrence parameters for all the documented probable sources are established from an updated earthquake catalogue. The contour maps of probable spectral acceleration at 0, 0.2, and 1 s (5% damping) are presented for 475 and 2475 years return periods. Also, the hazard curves and uniform hazard response spectrums are presented for all the important cities in this province. Results indicate that the present codal provision underestimates the seismic hazard at cities of Bilaspur, Shimla, Hamirpur, Chamba, Mandi, and Solan. In addition, regions near Bilaspur and Chamba exhibit higher hazard levels than what is reported in literature.

Key words: PSHA, GMPE, seismic hazard, site coefficients, Himalaya.