2015年ネパール・ゴルカ地震の本震・余震を使ったカトマンズ渓谷のDMG観測点の非線形サイト効果の検出

Detection of nonlinear site response using the main shock and its aftershocks of the 2015 Gorkha, Nepal Earthquake recorded at the DMG site of the Kathmandu Valley, Nepal

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We have tested the occurrence of non-linear behavior of soil at the DMG site using the accelerograms of the main shock and its aftershocks during the 2015 Gorkha, Nepal Earthquake. The DMG accelerometric station is installed on the surface at the concrete slab of the single-storey office building in the central part of the Kathmandu Valley filled by sediments. We calculated the horizontal to vertical spectral ratios of S-waves part of the earthquake records (S-H/V) which is expected to provide information about the ground response. Then we calculate the degree of non-linearity (NDL) (Noguchi and Sasatani 2008) for the main shock and its 5 aftershocks in the frequency range from 1 Hz to 10 Hz. It is found that DNL of the main shock record clearly different from those of the aftershocks records. The PGA-DNL plot shows that the main shock runs off from the trend formed by the aftershock records.
Based on the above study we guess that non-linear behavior took place during the main shock of the 2015 Gorkha, Nepal Earthquake.

キーワード：非線形サイト効果、非線形指標、ゴルカ地震、カトマンズ渓谷
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