

1.5-P08. Comparison between Site Motion Amplification Based on the Impedance Contrast Relative to the H/V Ratio Amplification along the Eastern Shore of the Dead Sea

This study is oriented towards the reduction of seismic hazards through studying the dynamic characteristics of surface geology, based on ground ambient vibration. Thirty six direct records of ground ambient vibration along the eastern shore of the Dead Sea were obtained, spectrally analyzed and the dominant resonance frequency of each were applied as an input parameter in this study. Amplification factor and acceleration were calculated for each site using an optional impedance contrast equal to 0.2. Maximal period of earthquake maximal amplitude 0.25, 0.30 & 0.35 second were applied in this study. This methodology is applied due to its reliability for all expected earthquake magnitudes and hypo central distances. Based on the previous study of the Dead Sea seismic regime for the past 100 years of instrumental records, the maximal expected earthquake, with a local magnitude of 5.94 was applied, taking into consideration the real geometrical location of the Feb. 11, 2004 earthquake with an epicenter confined by Lat. = 31.6900N and Lon. = 35.5800E. Dynamic characteristics for each site were calculated. Results obtained revealed that the calculated amplification factor, based on an impedance contrast of 0.2 coincides well with the terrain topography relative to the H/V Nakamura approach.

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