

Determination Site Effect of Zarqa City and Hashemite University Campus Based on Microtremors Field Measurements: A Microzonation Study

Abstract Zarqa governorate is one of the important governorates in Jordan. It is the second populated after Amman, the location of Zarqa gives the city a great importance because it lies on the main high ways leading to Syria, Iraq and Saudi Arabia and power plants which gives this city a special importance. The Nakamura's technique is applied in this study for both areas; Zarqa city and Hashemite University Campus in order to determine the resonance frequencies (RF) and amplification factors (AF) for each site then draw there maps which will be of a great use in the field of civil and structural engineering by enriching the building codes. The results of our study show that; values of (RF) are not affected by the time of recording. While values of (AF) can vary accordingly. Results also show that the (AF) varies from 0.8 to 8.55 in Zarqa city and varies from 0.4 to 9.36 in Hashemite University Campus, (RF) also varies between 0.37 Hz and 2.98 Hz in Zarqa city and varies from 0.59 Hz to 1.77 Hz in Hashemite Campus, that means some constructions in the study area, in case of a major earthquake, may experience minor damages respectively.

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