



IMPORTANCE of GEOPHYSICAL PROSPECTING for SOIL AMPLIFICATION STUDIES

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The amplitudes of earthquake waves, especially the accelerations may be significantly magnified, while travelling through the layered soil media. The amount of magnification may be as high as three to six times, depending on the intensity of shaking and also on the relative physical characteristics of the stratification. The Mexico City earthquake of September 19, 1985, the Bucharest, Romanian earthquake of March 4, 1977, as well as the Gediz, Turkey earthquake of March 28, 1970 have been presented as the scenarios for the typical examples of soil amplification. Examples of earthquake damages occurred during these three particular earthquakes, due to soil amplification have been illustrated.

It is emphasized that in order to be able to conduct an analytical study for soil amplification, the P – and S – wave velocities of each soil layer should be measured in situ, by means of appropriate geophysical prospecting.

The basic relations existing between the physical / mechanical soil parameters and the seismic wave velocities are discussed and also the steps of analytical studies for soil amplification are presented.

Keywords : Soil amplification, geophysical survey, P and S – waves, layered soil