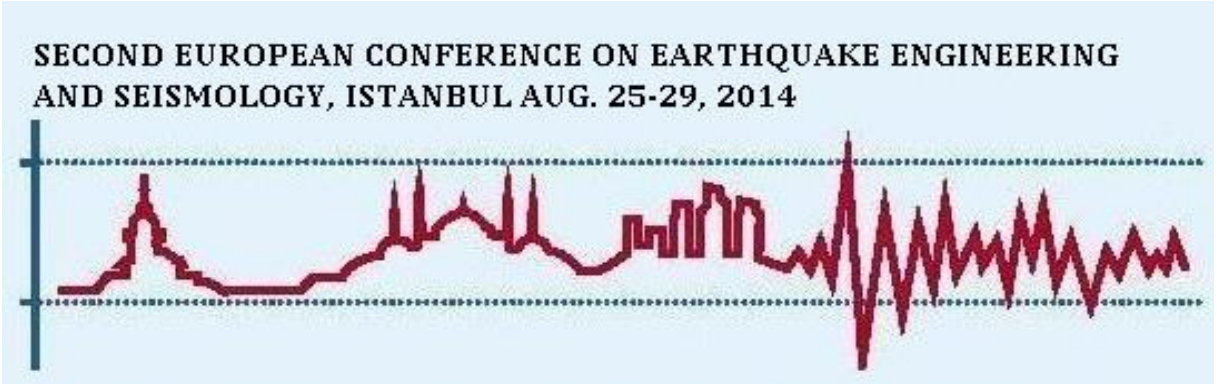

LOCAL SITE CHARACTERIZATION FOR THE TOURIST AREA OF TEL EL-AMARNA, MIDDLE EGYPT

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Tel El-Amarna area is located at the central part of Egypt, about 50 km southeast of El-Minia Governorate. It is built on the eastern bank of the Nile River. The area is selected for this study due to its historical interest as a famous tourist place where there exist many Pharaoh Temples and Tombs. It was historically known as Akhetaten, which means the horizon of the solar disk. It is very similar to the meaning of Amun Dwelt at Thebes, Ptah at Memphis and other gods at their favored places. Recently, local living people (Bedouins) called this area *Tel El- Amarna village*. The area is a plain field, separated from the Nile Valley by a strip of palm trees. It is covered mostly by sand and outlined by ruins of temples, palaces and houses that archeologists discovered or are trying to be found. Some tourists consider it as a romantic place they have ever seen, because of the silence and the peaceful beauty that the area gained through the centuries.

Tel El-Amarna area is low seismically active, but it is probably of high vulnerability due to the influence of the local site conditions on earthquake ground motion, as well as the presence of poor constructions in the absence of various issues such as building designs, quality of building materials, etc.

The shallow seismic refraction profiling was carried out at 18 sites in Tel El-Amarna. Another dataset at the study area is obtained by multi-channel active and passive seismic source measurements, which have been recorded at 18 profiles and four seismic noise arrays. The collected data is used to estimate both P and S-wave velocities and to delineate the near-surface ground model beneath the study area. The typical steps and procedures of multi-channel analysis of surface waves (MASW) were applied for processing the active source measurements. While the frequency–wavenumber (f–k) method was used to derive the dispersion curves from the passive source noise signals. The resulted dispersion curves were inverted using the neighborhood algorithm to obtain the shear-wave velocity models. The concluded Vs and Vp values provide a preliminary estimation of the geotechnical parameters and site classification for the shallow soil as they are of great interest in civil engineering applications.

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