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Evaluation of Geotechnical Parameters at Nubian Habitations in Kurkur Area, Aswan, Egypt

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Abstract : The Egyptian Government proposed a general plan, aiming at constructing new settlements for Nubian in south Aswan in different places around Nasser Lake, one of these settlements in Kurkur area. The Nubian habitations in Wadi Kurkur are located around 30 km southwest of Aswan City. This area are affecting by near distance earthquakes from Kalabsha faults system. The shallow seismic refraction technique was conducted at the study area, to evaluate the soil and rock material quality and geotechnical parameters, in addition to the detection of the subsurface ground model under the study area. The P and S-wave velocities were calculated. The surface layer has P-wave, velocity ranges from 900 m/sec to 1625 m/sec and S-wave velocity ranges from 650 m/sec to 1400 m/sec. On the other hand the bedrock has P-wave velocity ranges from 1300 m/sec to 1980 m/sec and S-wave velocity ranges from 1050 m/sec to1725 m/sec. Measuring Vp and Vs velocities together with bulk density are calculated and used to extract the mechanical properties and geotechnical parameters of the foundation material at the study area. Output of this study is very important for solving the problems, which associated with the construction of various civil engineering purposes, for land use planning and for earthquakes resistant structure design.

Keywords : shallow seismic refraction technique, Kurkur area, p and s-wave velocities, geotechnical parameters, bulk density, Kalabsha faults
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