PARAMETRIC ANALYSIS OF SOIL-STRUCTURE INTERACTION ON ISOLATED SHALLOW FOUNDATION BY FINITE ELEMENT METHOD

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ABSTRACT

The static soil-structure interaction can be considered as the mutual transmission of stresses and deformations between both, in this understanding the parametric analysis of the soil-structure interaction on isolated shallow foundation by the finite element method has been realized, with the objective of determining the main acting stresses on serviceability conditions, establishing which are the most relevant variables and proposing values that guarantee greater efficiency in the performance of the foundation. By the numerical models, elaborated with the student edition of the ABAQUS CAE software, the incidence of the soil type and the foundation shape on the stresses produced by the soil-structure interaction has been analyzed, the importance of the foundation area in the calculation of the bearing capacity of the soil has been determined; Likewise, it has been established how the foundation structure retains within itself a part of the forces produced by the structure, transmitting lower forces to the ground than theoretically calculations.

Keywords: Geotechnics, Foundations, Finite Elements, Soil-Structure Interaction.

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