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EINLADUNG

zu den Gastvorträgen

von

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Experimental Investigation of Stress Distribution in Sand Soil During the Installation and Loading the Short Displacement Pile

***Abstract*:** Currently one can find many experimental and analytical studies aimed for better prediction of sand soil response during the installation and loading stages of displacement pile. The interaction between the soil and the pile is very complex, this is the reason why it is not exhaustively described, so far. Response of the soil, especially the ultimate state necessitates investigate the nature of soil response via tip and shaft as well as their relation. Qualitative evaluation of the stress state influence on pile behaviour serves for more clear description of the soil ultimate response mechanism. Current investigation presents the results of several specific instrumented piles tests. The 1st and 2nd types of the tests revealed the shear and normal stresses distribution at particular areas of short displacement pile interface, during static vertical load test. The 3rd type of the tests illustrated the radial stresses increment paths in the soil during the pile installation stage. The performed tests of the short displacement piles cleared, that during the static load tests the highest shear stresses, on the pile skin, get concentrate near the pile tip and during the installation stage the radial stresses significant increase when pile tip gets near the push in load cells measurement plane.

Testing and Numerical Simulation of Holocene Marine Sand Uniaxial Compression

Abstract: The Baltic Sea shore silica sand in Klaipėda region was investigated. Compressibility of soil was investigated by laboratory oedometer testing and via numerical simulation, validation and analysis of obtained results performed. Shape of sand grains has been analyzed by scanning electronic microscope (SEM). The determined morphological parameters of sand grains where employed to create discrete models (particle models of grains). The oedometer test of discretized sand sample has been simulated applying the discrete element method (DEM) techniques. The background version of DEM and the numerical time–integration algorithm was implemented into original DEMMAT code. Test versus numerical simulation results revealed the significant compression curve character dependence on the discretized shape of sand grains and the Young's modulus of particles.