

Numerical Study on the Effect of Spudcan Penetration on the Jacket Platform

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Abstract : How the extraction and penetration of spudcan affect the performance of the adjacent pile foundation supporting the jacket platform was studied in the program FLAC3D depending on a wind farm project in Bohai sea. The simulations were conducted at the end of the spudcan penetration, which induced a pockmark in the seabed. The effects of the distance between the pile foundation and the pockmark were studied. The displacement at the mudline arose when the pockmark was closer. The bearing capacity of this jacket platform with deep pile foundations has been less influenced by the process of spudcan penetration, which can induce severe stresses on the pile foundation. The induced rotation was also satisfied with the rotation-controlling criteria.

Keywords : offshore foundation, pile-soil interaction, spudcan penetration, FLAC3D

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