

Soil Structure Interaction at Offshore Wind Support Structures



PhD Candidate: Pim Versteijlen
Section: Offshore Engineering
Promotor: Prof.dr. A.V. Metrikine

Description:

In the cost-cutting environment of the offshore wind industry, more knowledge of the magnitude of both the stiffness and damping during soil-structure interaction is desired. Limited knowledge of the actual damping ratio's leads to conservatism in design: too large diameters and wall-thicknesses are expected to be applied. Higher proved damping justifies increasing the design fatigue life time.



Similar effects result from under-estimation of the soil stiffness: more steel is applied to reach higher stiffness of structure in order to reach the desire natural frequency in design. A more realistic soil-structure interaction model could be a significant cost saver in this industry.

Goal:

The development of a soil-structure interaction model and validation of its parameters via full scale offshore field tests.

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Contact Details:

E-mail: W.G.Versteijlen@tudelft.nl
Pim.versteijlen@siemens.com
Phone: +31 (0)70 333 6920
Room: -