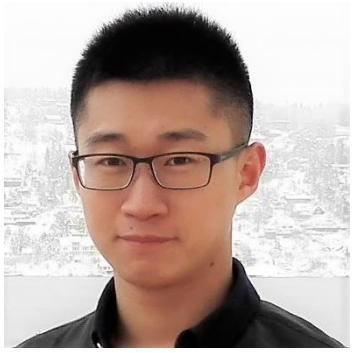
Underwater noise mitigation for offshore pile-driving



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Description:

During the installation of offshore wind farms, the noise generated by impact piling may harm the marine creatures. One of the methods to reduce the sound levels is the use of air bubble curtains. Up to today these bubble curtains are designed mainly on the basis of previous experience. A better understanding of the science behind the noise generation and mitigation would enable better engineering of the bubble curtains, facilitating maximum reduction of the noise. More precisely, emphasis will be placed on the modelling of the coupling problem of the pile vibration and the oceanic sound propagation, the prediction of the mitigation performance of the bubble curtain, and the comparisons between the measured data and the predicted results.

Goal:

The goals are 1) to explain differences observed between model predictions and measurements with the emphasis on the physics of the problem and improve the prediction models when possible; and 2) to examine the optimum configurations of the bubble curtain for mitigating the underwater noise from piling driving.

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