February 17, 2022

Dear Prof. Erkan Oterkus,

I am pleased to submit my research paper entitled “Comparison of Potential Theory and Morison Equation for Deformable Horizontal Cylinders” by Chungkuk Jin. I look forward to reviewing our article to publish in the Sustainable Marine Structures.

This study investigates the hydro-elastic behaviors of a fully submerged horizontal cylinder in different regular waves. Two methods were proposed and compared in this study. The first method was based on potential theory in frequency domain and the discrete-module-beam (DMB) method, which discretizes a floating elastic structure into a sufficient number of rigid bodies while simultaneously representing the elastic behavior from beam elements with Euler-Bernoulli beam and Saint-Venant torsion. Moreover, the Morison method in time domain was employed; this method estimates wave forces from the semi-empirical Morison equation, and the elastic behavior is embodied by massless axial, bending, and torsional springs. Various parametric studies on cylinder diameter, submergence depth, and wave direction were conducted. Wave forces, dry/wet mode shapes/natural frequencies, and dynamic motions are presented and analyzed.

This manuscript has not been published and is not under consideration for publication elsewhere. If any additional information or work is requested, please do not hesitate to contact me at jinch999@tamu.edu. Thank you for your consideration of our submission.

Best regards,

Chungkuk Jin

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