

Spectral response surface and the ringing response of offshore structure

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Abstrak

A method, called spectral response surface method, is proposed for the study of the ringing phenomenon of offshore structures. Newman's results for diffraction force on a column were reformulated in terms of the frequency components of the ocean surface and their Hilbert transforms. Using a first-order reliability method together with a dynamic model for the structural response, it is straightforward to calculate the ocean surface history most likely to generate an extreme ringing response and the ringing response history.