

ANALYSIS OF FLEXIBLE NET STRUCTURES IN MARINE ENVIRONMENT

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Abstract. The classic aquaculture units are flexible net structures where loads from the marine environment are drag-dominated. Such systems are normally analysed using computer intensive dynamic hydro-elastic analysis. The current analysis culture is to apply a regular design wave analysis to cage grids which are drag dominated, while irregular analysis is applied to barge units which are mass dominated. This is mostly due to time efficiency, but has been under the assumption that the drag dominated systems have less need for irregular analysis to obtain a realistic estimate for the max design response value.

This paper does extensive analysis of a classic aquaculture cage case to compare the regular and irregular response analysis. Response from regular wave analysis is compared to response from three hour long time series of irregular waves. Extreme value statistics are derived and results are discussed.

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