Stress verification of a TLP under extreme wave environment(PDF)

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Title: Stress verification of a TLP under extreme wave environment

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摘要:

Stress response of a tension leg platform (TLP) in extreme environments was investigated in this paper. A location on one of the gussets was selected as the object point, where directional stresses were numerically simulated and also experimentally verified by a strain gage. Environmental loading and the platform’s structural strength were analyzed in accordance with industrial standards, utilizing linear wave theory and the finite element method (FEM). The fast Fourier transform technique was used to calculate the stress response amplitude operators (RAO) from the records of measurements. A comparison was performed between the stress RAO of the numerical simulation and that of the actual measurements. The results indicated that the stress RAO of the numerical simulation fitted well with measured data at specified wave headings with different periods.

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