COMPOSITE RISER RELIABILITY UNDER HARSH ENVIRONMENTAL CONDITIONS

A. Sobey, H. Ragheb & R. Shenoi, *University of Southampton, UK*

D.C. Pham, *Institute of High Performance Computing, Singapore*

ABSTRACT

Offshore engineers are looking to explore resources further from shore and at greater depths. A number of papers have indicated that composite materials may provide benefits at these depths. However, there are only a small number of risers in-service and with no history of operation these applications require experiments and theoretical investigations to ensure the safety and increase the knowledge about how they will survive the deep-water conditions. This paper therefore investigates a simplified model for composite risers for application to reliability analysis. A static catenary model is used with classical laminate plate theory used to generate stresses in the composite. This is connected to a Monte Carlo Simulation which is used to compare composite risers in harsh and normal conditions.

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