

Using the Drilling Riser as a Position Reference

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Abstract

This paper presents a system where response measurements of the drilling riser are used to derive position estimates suitable for DP-operations by use of the Kalman filtering technique. By combining vessel position and riser inclinations a dynamic mathematical model of the riser is tuned automatically by estimating a current profile. After initial tuning, the model is able to estimate the vessel position based on riser inclination measurements only.

The Riser Position Reference (RPR) system prototype is presently under test onboard the drill ship “*Saipem 10000*” offshore West Africa. Some of the results from the initial sea trials are presented herein. The RPR has been installed in combination with an existing Riser Management System (RMS), which includes a position optimizing function for drilling operations.

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