Vertical Position Control for Top Tensioned Riser with Active Heave Compensator

The top and bottom angles of a marine riser are of crucial importance during e.g. drilling and workover operations. A vertical position control with active heave compensator (AHC) is proposed to maintain the safety of the riser when subjected to environmental excitations. The possibility of reducing the maximum angular response level by adjusting the vertical rod position by means of an active heave compensator is investigated with a positioning algorithm based on adaptive backstepping. Riser top and bottom angles are dealt with by the algorithm in order to minimize both angles.

General information
State: Published
Organisations: Automation and Control, Department of Electrical Engineering, Norwegian University of Science and Technology
Contributors: Leira, B. J., Fang, S., Blanke, M.
Pages: OMAE 2011-49778
Publication date: 2011

Host publication information
Title of host publication: Proceedings of the 30th International Conference on Ocean, Offshore and Artic Engineering
URLs:
http://www.asmeconferences.org/OMAE2011/index.cfm
Source: orbit
Source-ID: 280180
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011