

## Non Linear DP Control

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### Abstract

In the dynamic positioning control and thrust allocation system of the vessels, it is difficult to obtain an optimal solution in real time because of inherent non-linearity, and development of a reliable real-time calculation method for the optimal control has been waited for. The control system we have developed realizes a real-time optimal control. This paper presents examples of application of the real-time nonlinear receding horizon (RH) control for route-tracking and real-time algorithm for optimal thrust allocation for redundant actuators. The effectiveness of the method applied to the systems is verified by computer simulation and experimental study conducted at a model test basin.

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