

Geodetic investigation of ship roll estimation for manoeuvring control of cruise liner conveyance

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Abstract

The shipyard “Meyer Werft” at Papenburg (Germany) is building large cruise liners for customers from all over the world. However, Papenburg is connected to the North Sea only by the small river Ems. Consequently, the navigation of the first 36 km of each large ship poses a serious problem. The position and orientation of the ship must be computed accurately at any time. The track of the ship must also be predicted over the next several minutes in order to derive commands to the pilot. We propose a prediction method based on filtering the observations when the ship rolls due to wind and manoeuvring forces.