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HELP

[TOP](#) > [Available Volumes](#) > [Table of Contents](#) > Abstract

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## Seakeeping Estimations of Fast Ships with Transom Stern

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**Summary:** An estimation method of the seakeeping of fast ships with transom stern is proposed and validated through the comparison with experimental results. The method is based on the potential theory and the Rankine panel method is employed as a numerical computation method. The transom stern is carefully observed in the experiments and it is confirmed that the transom stern is completely dry even in free motion in waves. A condition corresponding to the observation is derived and imposed as the boundary condition at the free-surface just behind the stern. Numerical results are compared with experiments from the aspects of hydrodynamic forces, ship motions and unsteady waves around the ship. Through the comparisons, the adequacy of the transom stern condition proposed in the present study and also the significant influence of the sinkage and trim in the seakeeping estimations are confirmed.

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