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Verification and validation of the JoRes1 Tanker in model and full scale

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ABSTRACT

This study presents the verification and validation studies on JoRers1 Tanker ship. Full-scale and model-scale self-propulsion computations were performed using a selection of CFD software. The importance of sand-grain roughness value and turbulence model in full-scale simulations are discussed, and results are compared with the power estimation using model-scale tests.
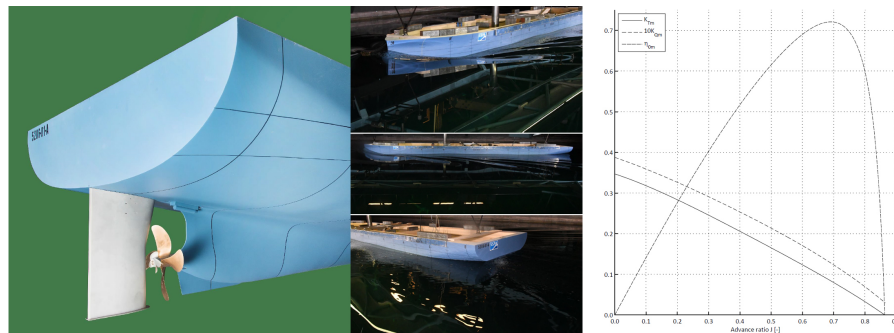
Figure 1: JoRes1 model test performed in RISE/SSPA towing tank.

The towing tank tests were performed for the JoRes1 Tanker at RISE/SSPA. Resistance and self-propulsion tests were carried out with a 1:26 scale ship model. The hull lines and rudder design were submitted by the JoRes project. The design propeller was used for the propeller open water and self-propulsion tests. The propeller was fitted with a PBCF for some of the tests. The PIV unit model was also installed on the starboard side in the same location as in CFD and sea trials. The resistance and self-propulsion tests were performed at speed trial draft. The measurement uncertainty was assessed for the resistance tests.

References

http://jores.net