

## **The Future of Cavitation Prediction for Marine Propellers**

Cavitation poses a range of issues to the designer of marine propellers and propulsion systems, including erosion, pressure pulses, tonal and broadband noise. Numerical simulations have advanced in line with increasingly affordable computing power, but today offer only a partial capability in terms of predicting these phenomena. This address looks at the future of numerical prediction and provides an analysis of how and when new techniques will translate into practical tools for the designer.

Different types of cavitation nuisance are reviewed. In each case the underlying physical processes are briefly described and classified in terms of time scale and length scale. The results are used to understand the state-of-the-art in numerical models of propulsor cavitation – which types of model are being developed and why – and then to assess the extent to which these models will be able to help the designer of the future.

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