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## Cavitation modelling using RANS approach

The use of cavitation modeling within the maritime industry area is in a crucial state. The advances in the computer power, the understanding of the numeric?s and of the cavitation phenomena do make possible to bring these kinds of simulations into the daily use. The goal is a cavitation method to be applied from the design stage to the problem solving situations. The paper will present cavitating results obtained for a two dimensional case: NACA 0015 profile and for a three dimensional case: Twist11 foil. These cases are the most popular numerical and experimental benchmarks used to validate the cavitation simulations. This step will prove the capability of simulations when using the proposed cavitation modeling and RANS solver approach. For an adequate mesh and proper turbulence modeling, predictions for developed cavitation regions like: sheet, clouds or vortices are possible. In a final step, the cavitation modeling will be put to the test for a real application challenge: a propeller. This last complex case will involve a rotating propeller and therefore moving mesh approach has to be implemented as well. By the end of the paper, the proposed cavitation method used within a RANS code for dedicated flow features grids, proves to give consistent results.

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**Industries:**

[Marine](#) <sup>[1]</sup>

**Products:**

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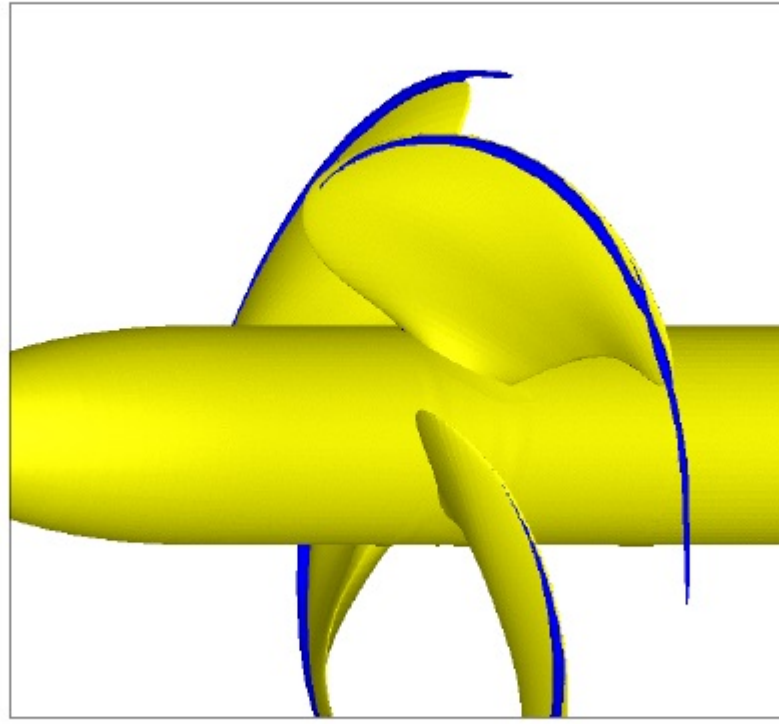
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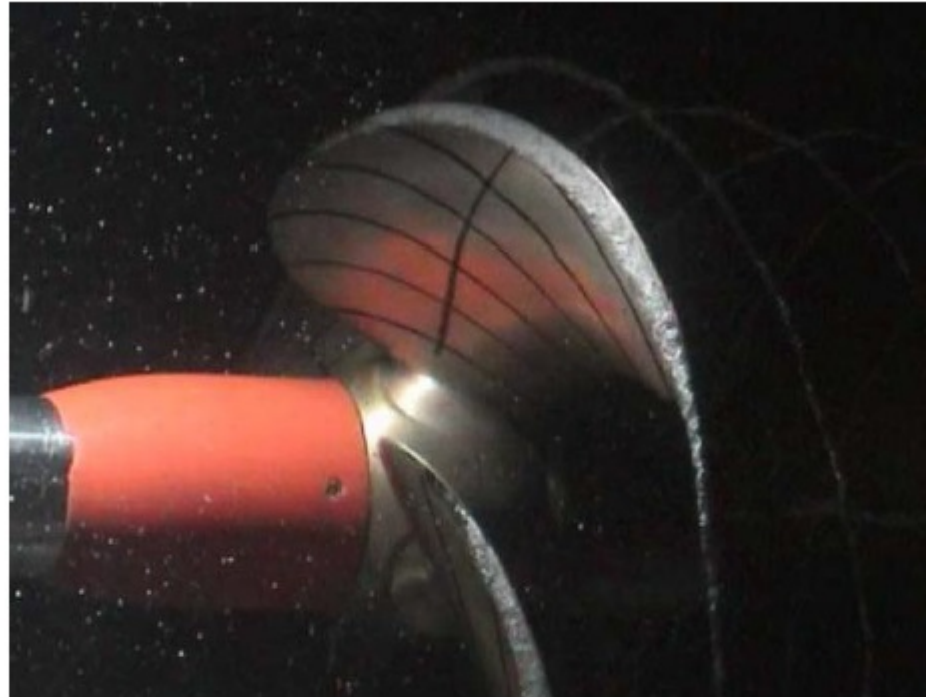
**Image:**

improved.

still to be



**Figure 18: Pressure iso-surface=2370Pa, simulations**



**Figure 19: Cavitation visualization, model tests**

Note that, the cavitating results over the skew propeller are still under investigation and further post-processing is to be done and published in a later stage, both on model and full scale.

## CONCLUSIONS

## REFERE

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8. Foeth B a three-d Netherlan
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