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Propeller diameter selection based on numerical analysis of wake and induced-pressure on blades and on tunnel stern surface

Aim of this work is the analysis of the flow in the stern region of a by simulations.

In this work will be reported the numerical analysis of the flow around the propeller working in a stern-tunnel of a fully appended twin–screw fast displacement M/Y. Particularly, the aim of the study is the evaluation of the effects on the pressure and on the wake in the tunnel region, due to the diameter variations of the propellers. The U-RANSE simulations will be performed in time domain in order to investigate the interaction between tip clearance reductions and increasing of pressure pulsations on the tunnels surface and on the propellers' blades.

The increasing pressure variability - that potentially will increase noise and vibrations, will be evaluated in parallel with the expected improvements of the thrust and of the wake fraction.

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