

FOR IMMEDIATE RELEASE
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New Propeller Design and Analysis Module

A new tool from the developers of NavCad™ and PropCad™

HydroComp is in the latter stages of a two-year internal R&D effort to develop a Propeller Design and Analysis (PDA) module that will offer a cost-effective alternative to complex codes for wake-adapted propeller design and the prediction of propeller performance.

Development objectives for the PDA module are reliability, usability, behavior, and cost-effectiveness. Specific technical goals include well-behaved predictions with no unusual results, and that special knowledge of propeller modeling is unnecessary.

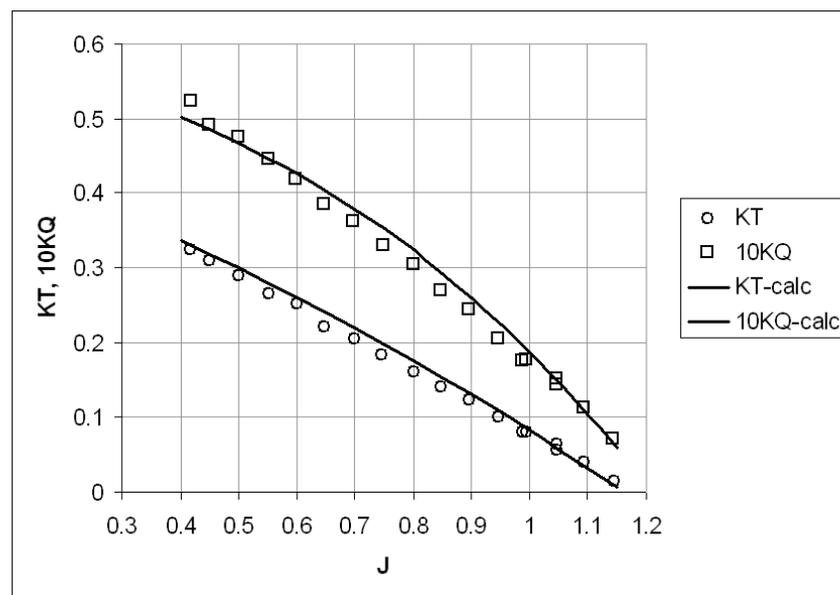
Technical features

The module utilizes a “vortex lattice lifting-line” calculation engine with special proprietary enhancements. Users can select from a list of foil types (such as *NACA 66 mod*, *Segmental*, and *Bi-Circular*) to more accurately predict performance, especially in the off-design analysis of KT-KQ curves. Propeller configurations include both open and ducted propellers, with work continuing on counter-rotating and tandem propellers.

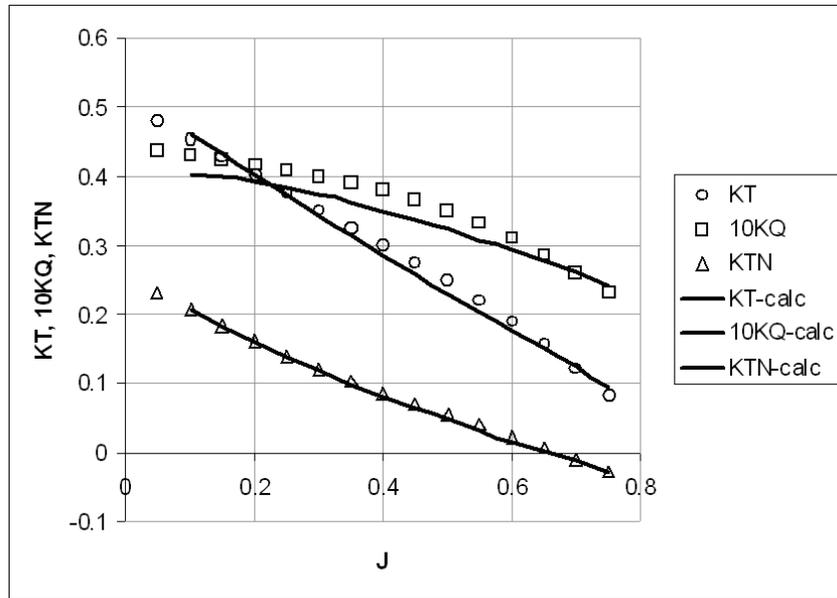
The PDA module is hosted by HydroComp’s NavCad resistance and propulsion software. Data exchange is available to the PropCad propeller geometric modeling software, and will be extended to third-party CAD and analysis codes.

Validation

Shown below are two representative validation plots for an open propeller and a ducted propeller. The developers were very pleased with the validation results in general, and the newly developed ducted propeller features in particular. Ducted propeller performance is defined by selection of a nozzle type (e.g., *19A*, *37*, *33*), and representative performance coefficients are employed for prediction of nozzle thrust contribution, inflow velocity, and tip-gap.



Open propeller performance (DTRC 4119)



Ducted propeller performance (Kaplan 4.55 in 19A nozzle)

About HydroComp

Celebrating its 25th year of operation in 2009, HydroComp provides software and services for the performance analysis and design of marine vehicles to industry, research, academic, and government clients. The company is proud to have served over 600 customers from more than 60 countries.

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