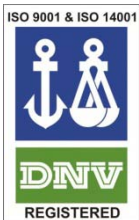




INCREASED ENERGY EFFICIENCY OF THE FISHING FLEET DUE TO IMPROVED HYDRODYNAMIC PERFORMANCE

VICUS DESARROLLOS TECNOLÓGICOS S.L.
VIGO



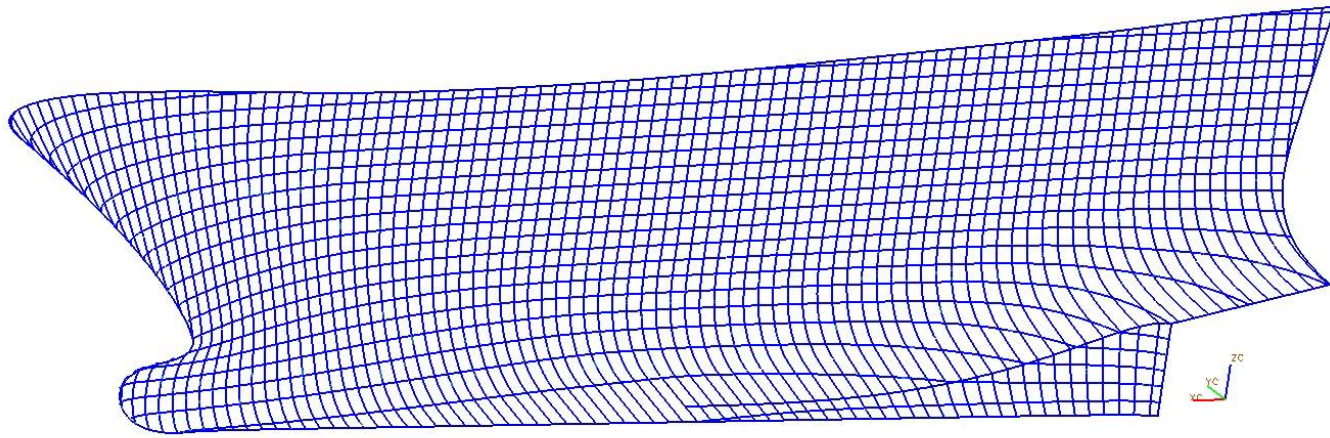
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CASE DEFINITION



CASE DEFINITION

- MAIN PARTICULARS:

L_{pp}	36,0	m
L_{wl}	39,0	m
B	9,0	m
T_m	3,5	m
Δ_{BH}	662,2	m ³
Sw	454,2	m ²
A_{wl}	286,1	m ²
L_b	2,3	m
X_{CB}	16,4	m
C_B	0,58	-
C_X	0,83	-
C_{wp}	0,82	-
L_{wl}/B	4,33	-
B/T	2,57	-
f_{BT}	0,1	-

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METHODOLOGY

- TOOLS:

- RANSE EMPLOYING FV – STAR CCM+
- POTENTIAL Eq. EMPLOYING BEM – NU SHALLO / PPB

DESIGN

SHIP

SEGREGATED
APPROACH

- HULL RESISTANCE
- HULL INTERACTION
- PROPELLER
- RUDDER

VERIFICATION

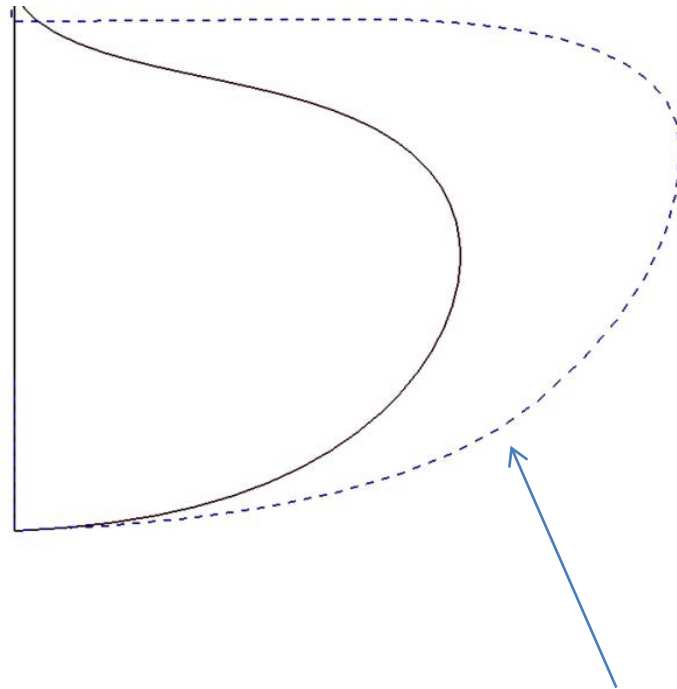
TOWING TANK

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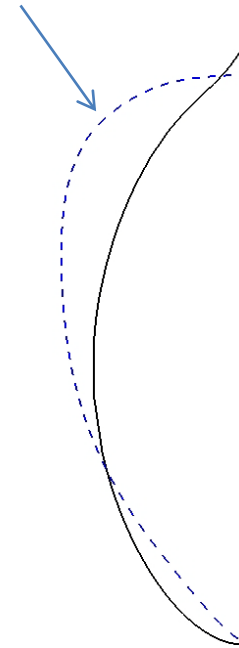
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HULL: RESISTANCE

- BULB MODIFICATION



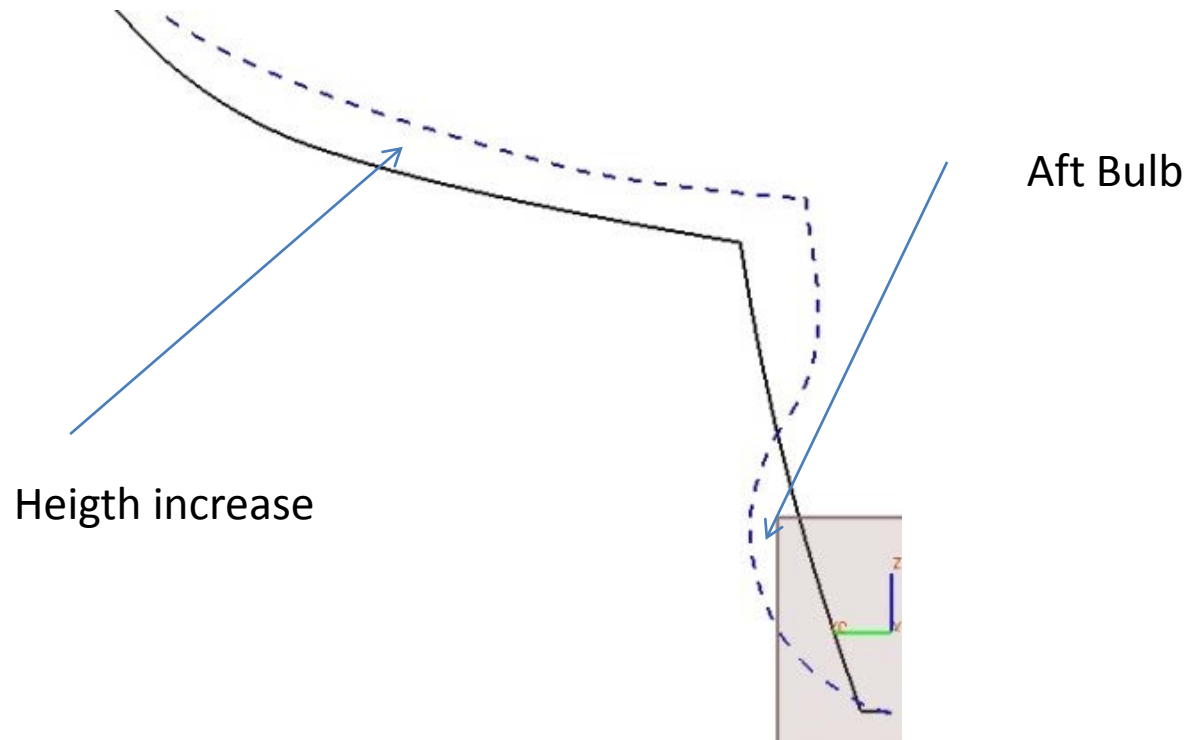
Area distribution change



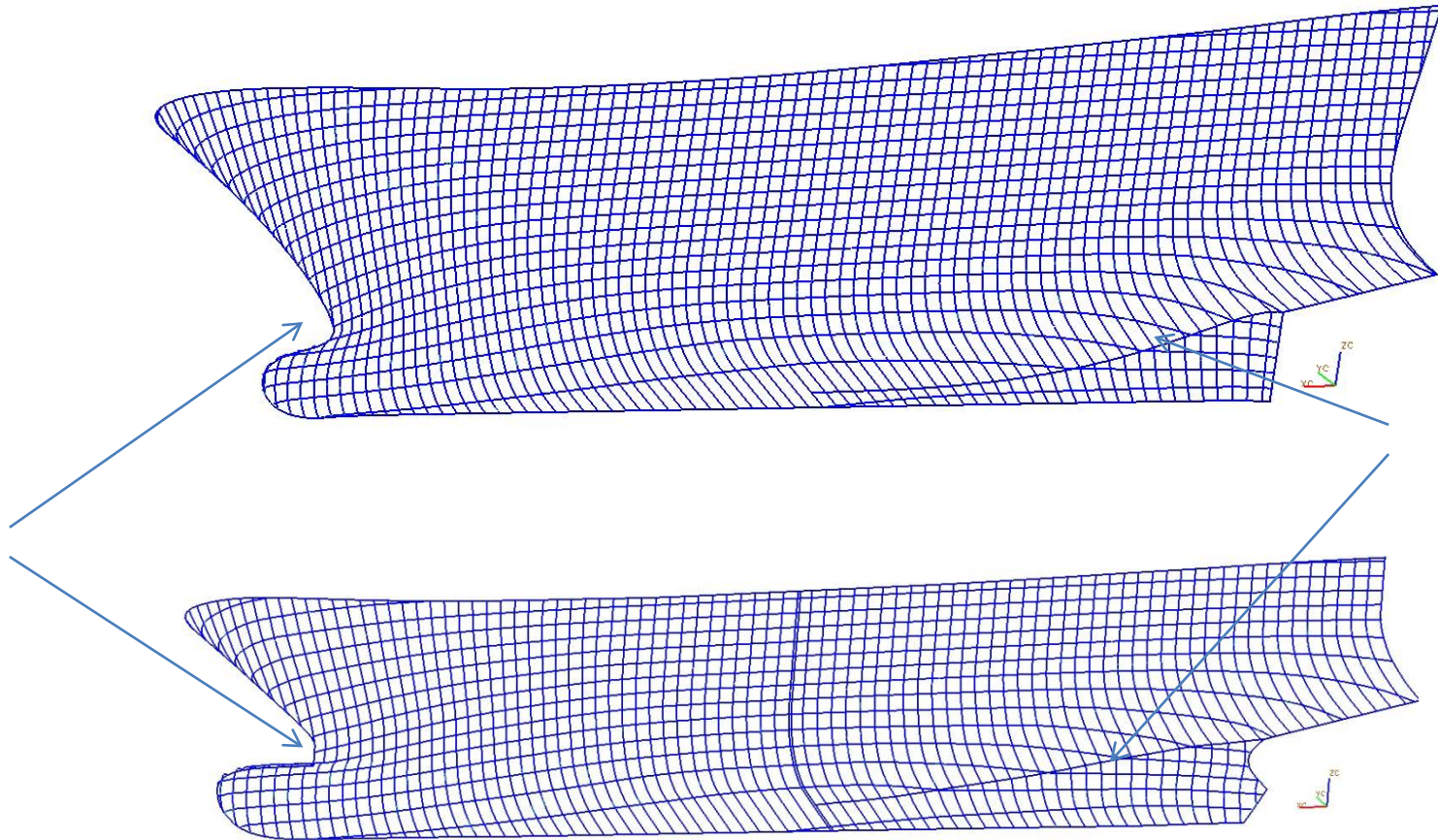
Length increase

HULL: WAKE

- AFT PART MODIFICATIONS



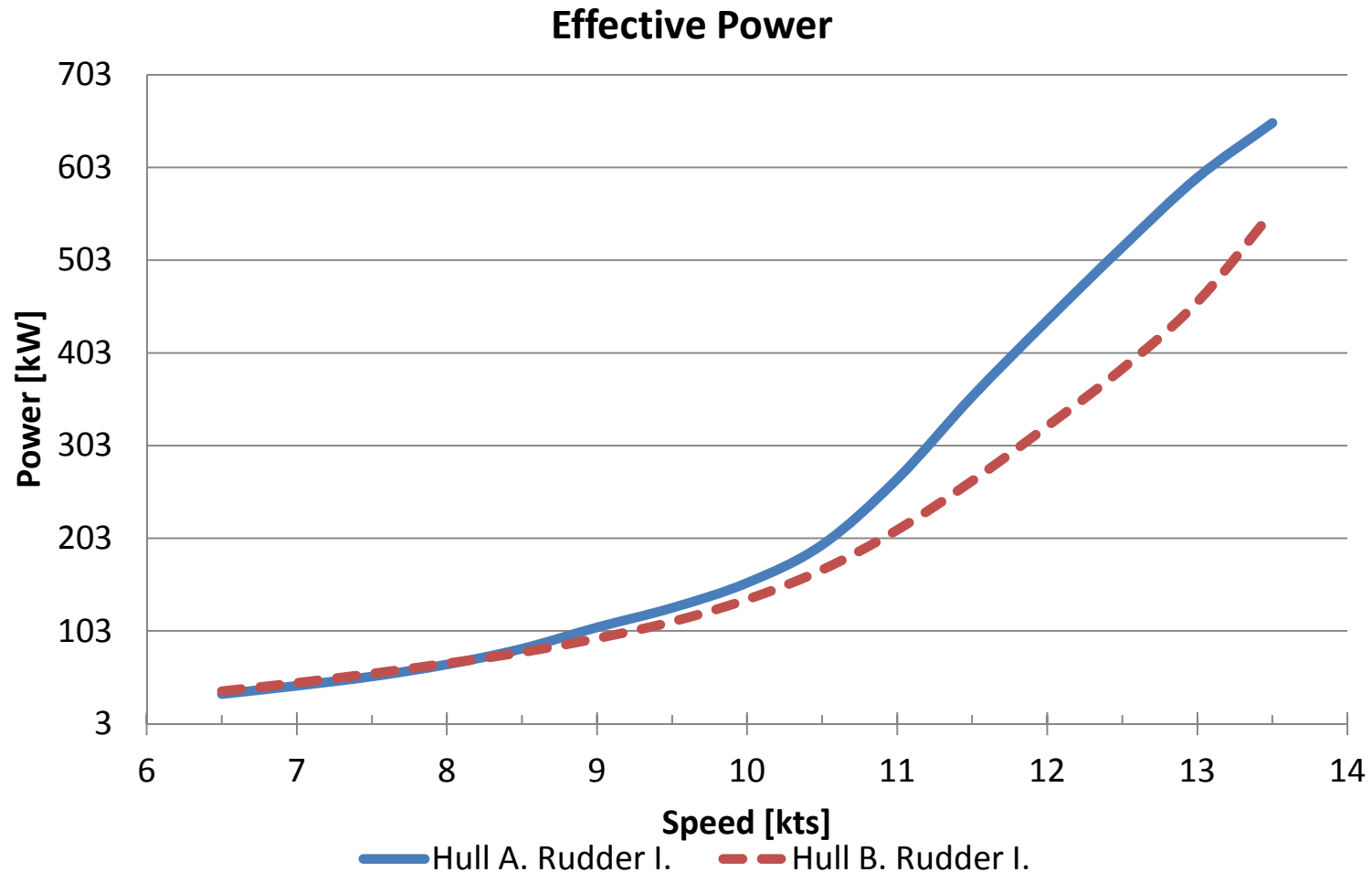
HULL – PROPELLER INTERACTION



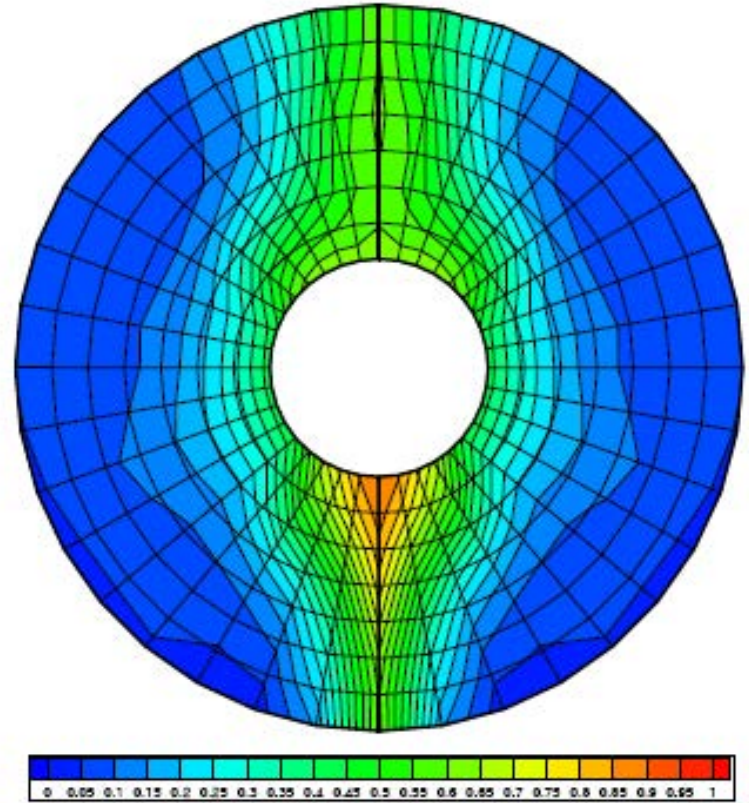
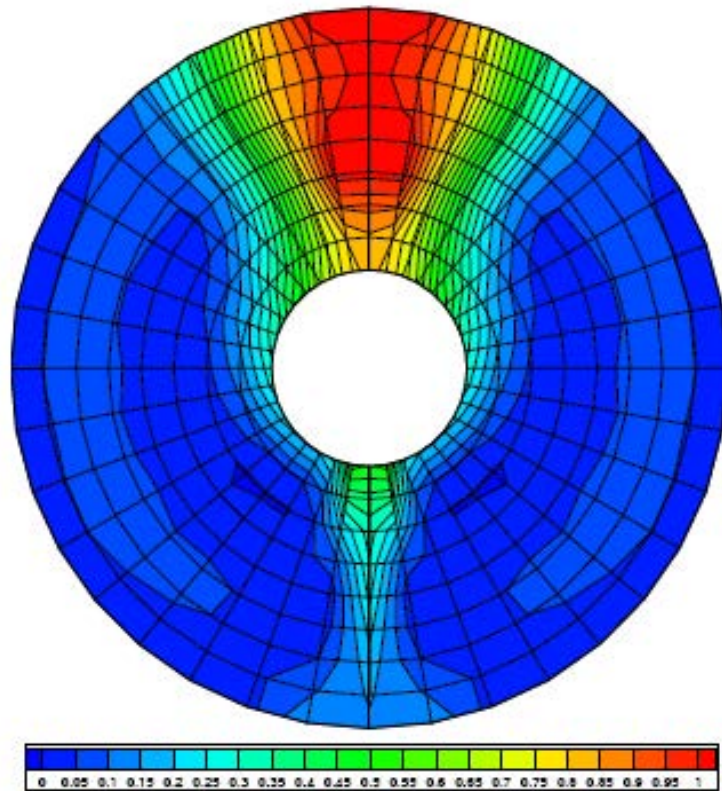
HULL: RESISTANCE



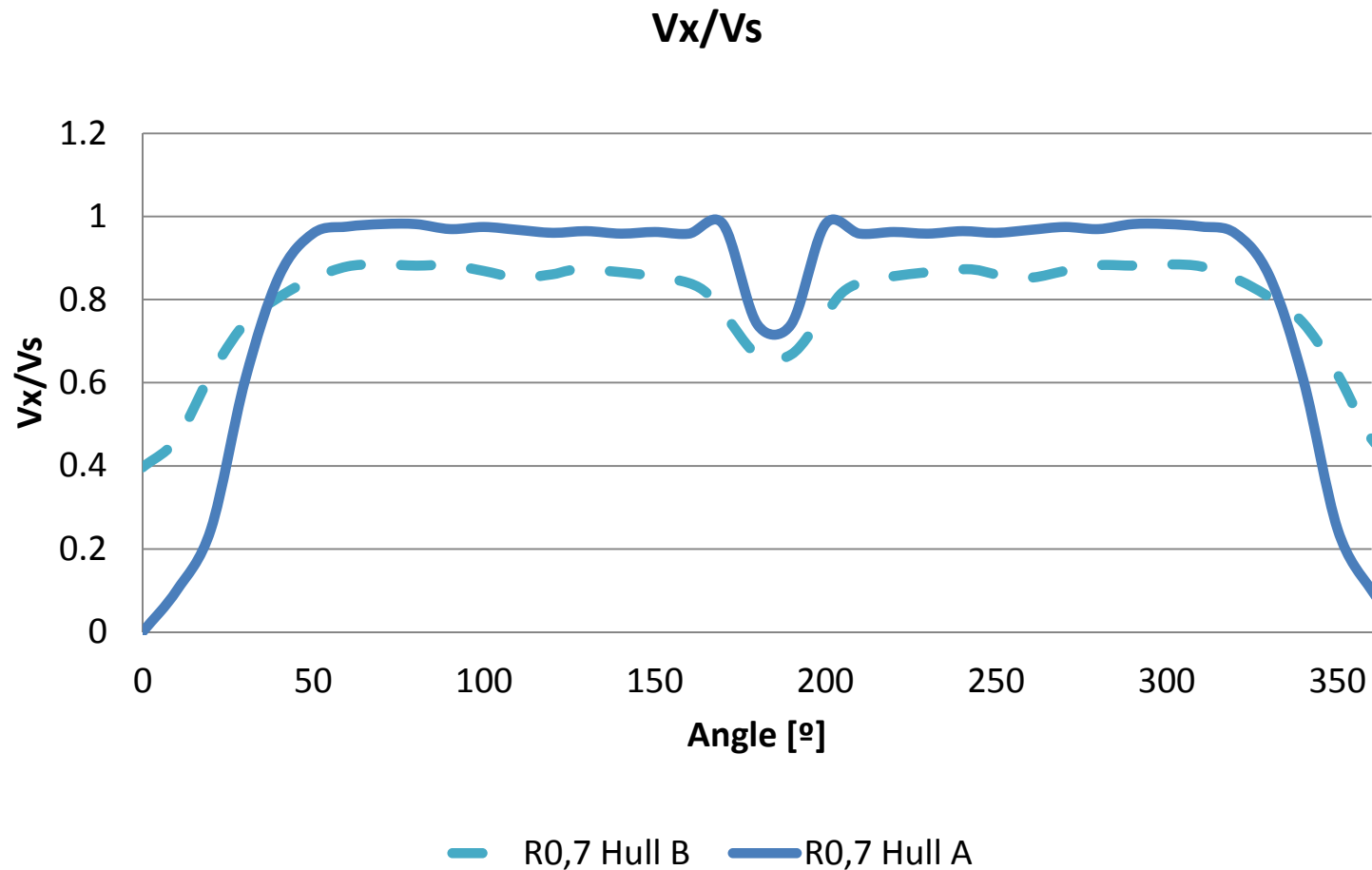
HULL: RESISTANCE



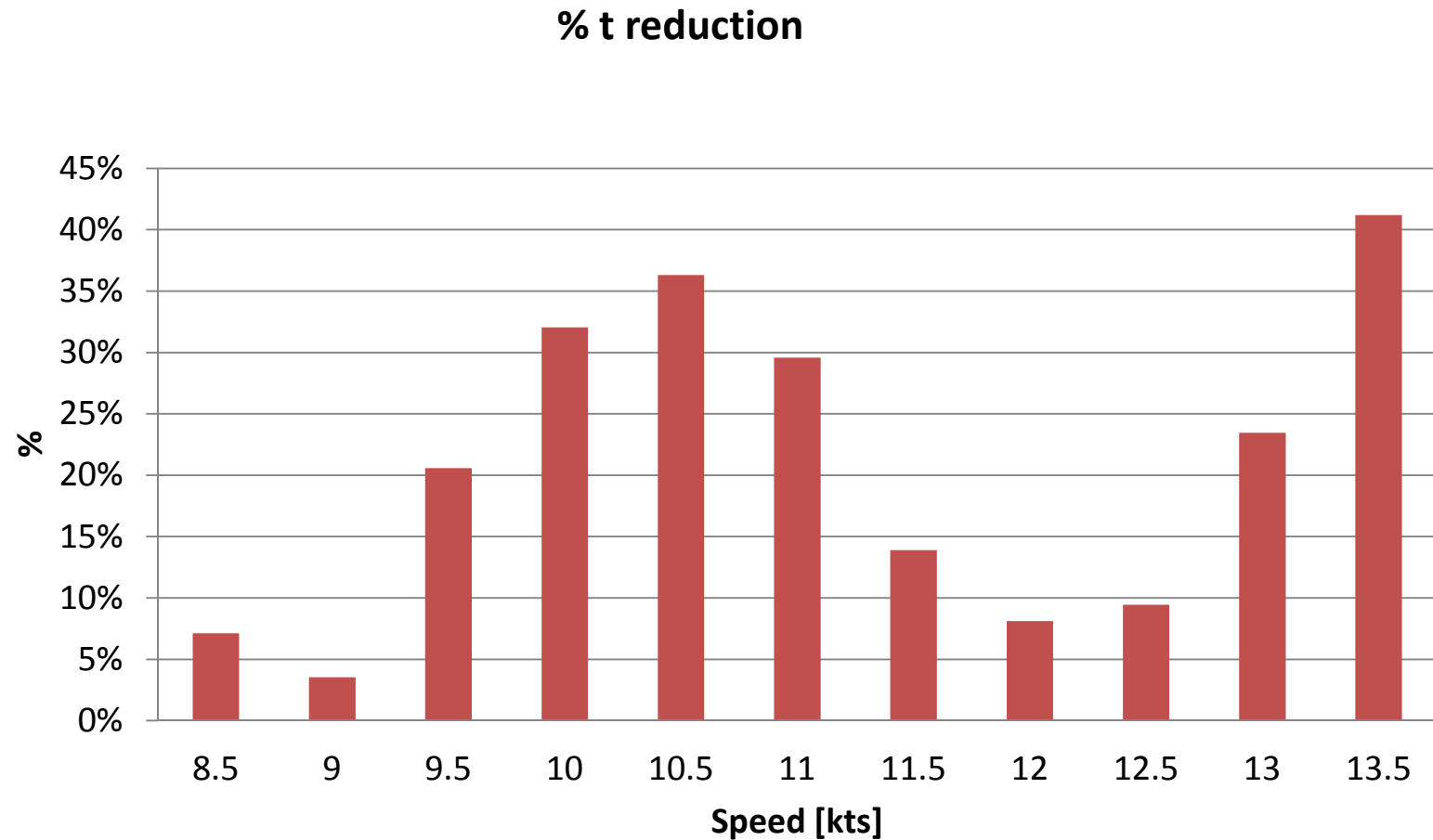
HULL: WAKE



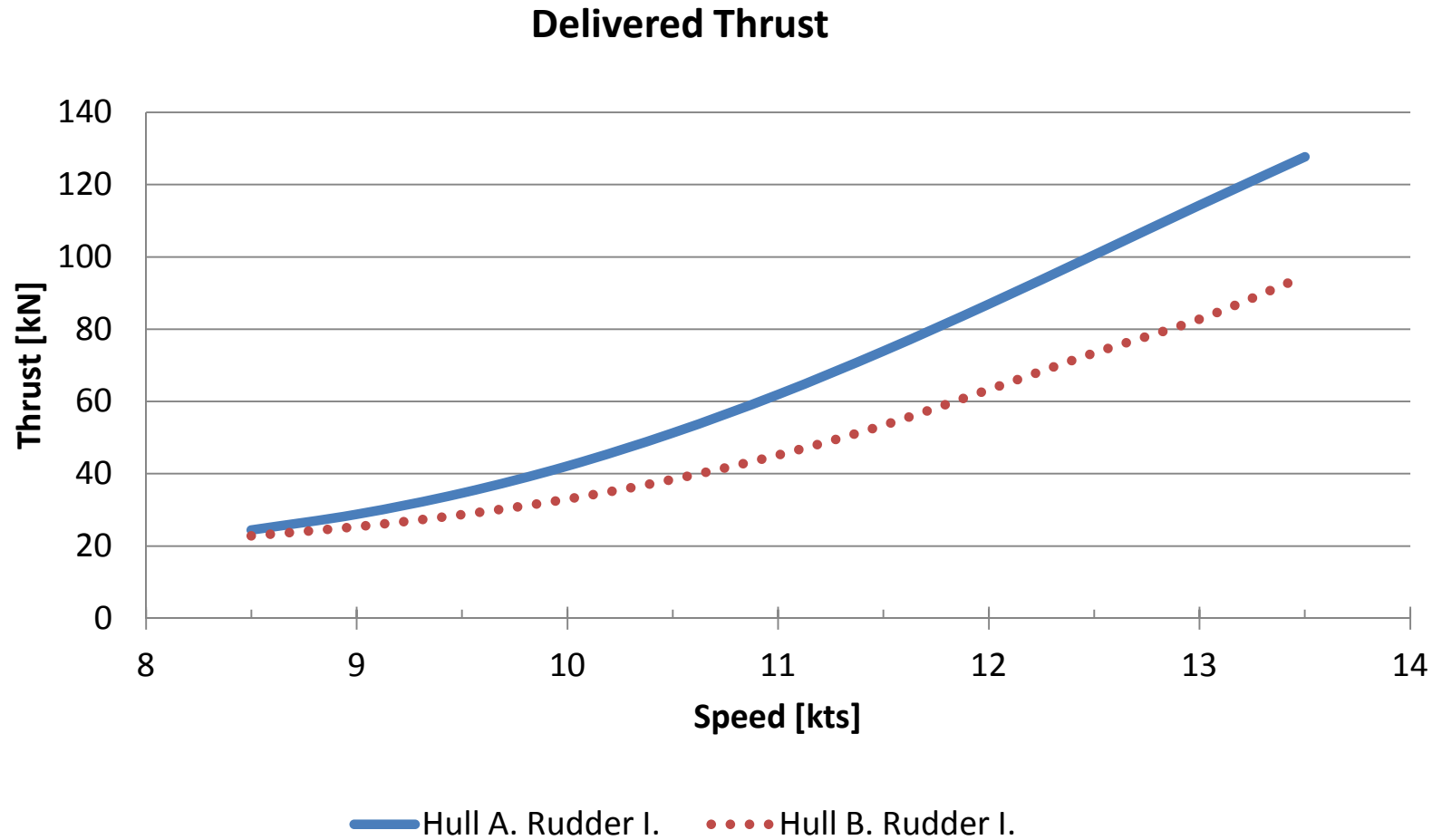
HULL: WAKE



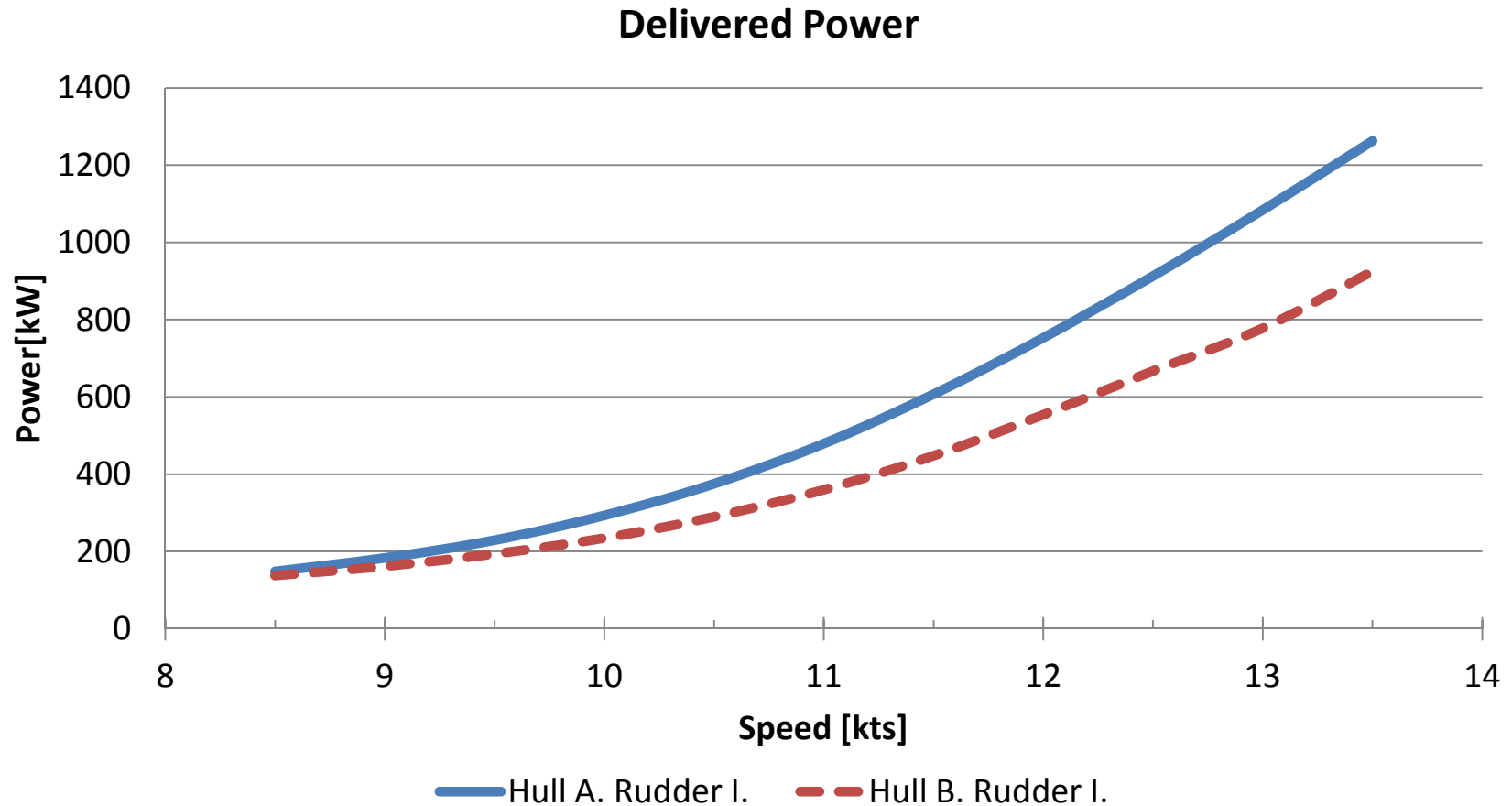
HULL: SELF PROPULSION



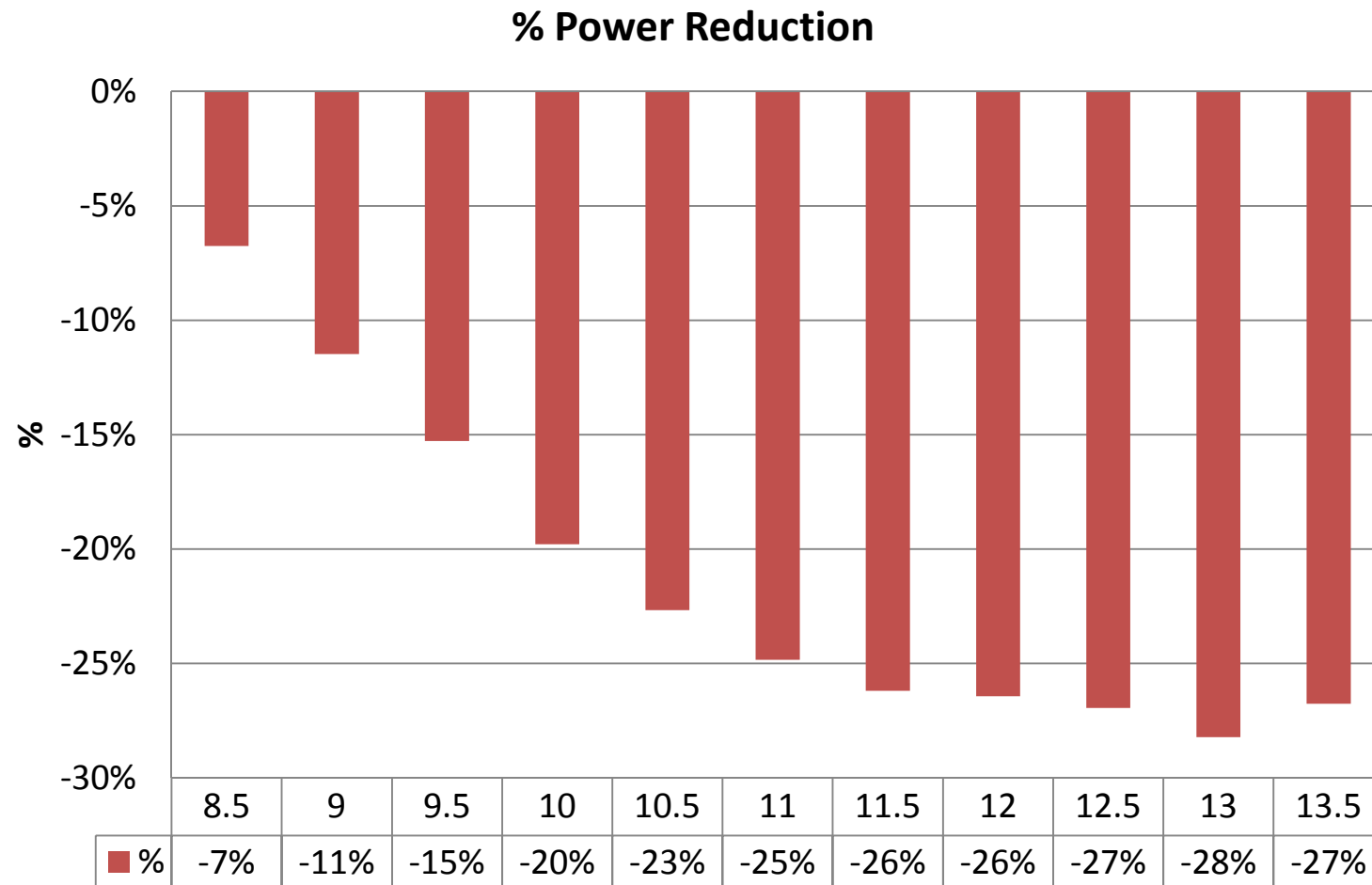
HULL: SELF PROPULSION



HULL: SELF PROPULSION



HULL: SELF PROPULSION



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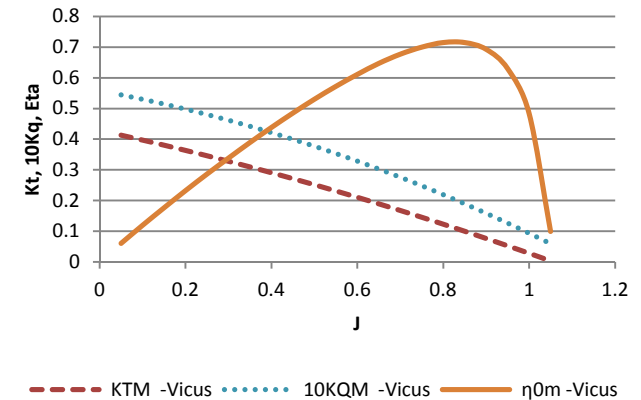
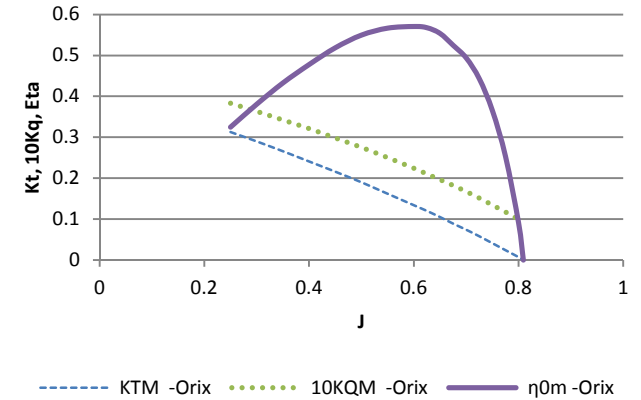
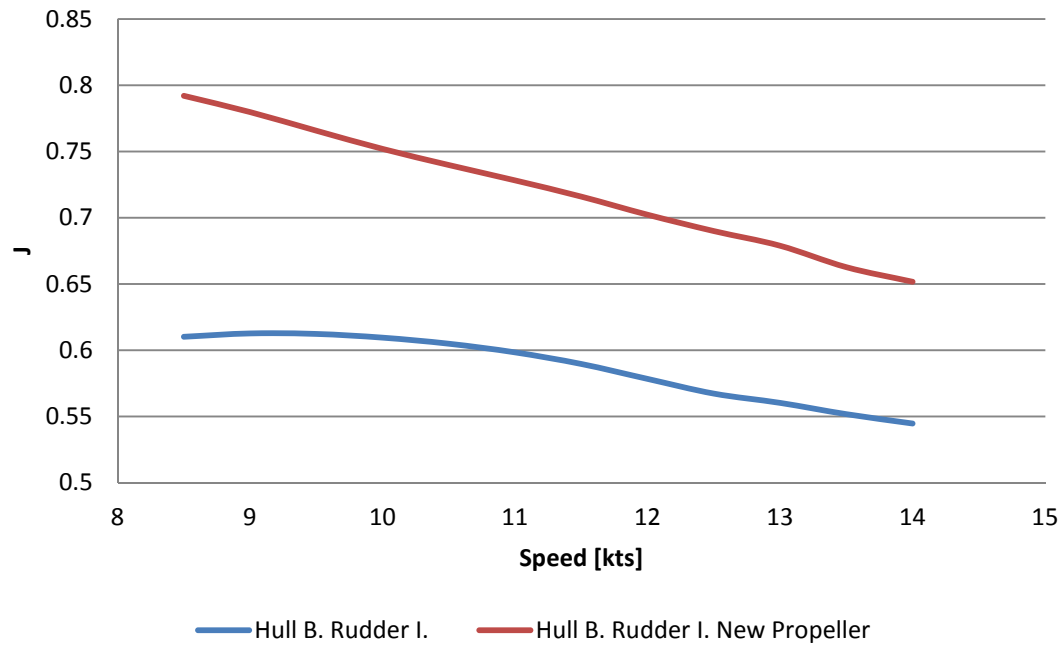
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HULL: PROPELLER

Characteristics	Original	New
Diameter, m	2,486	2,7
Pitch at 0,7R/D	0,785	0,957
EAR	0,69	0,447
Blades number	5	4
Propeller RPM	230	190

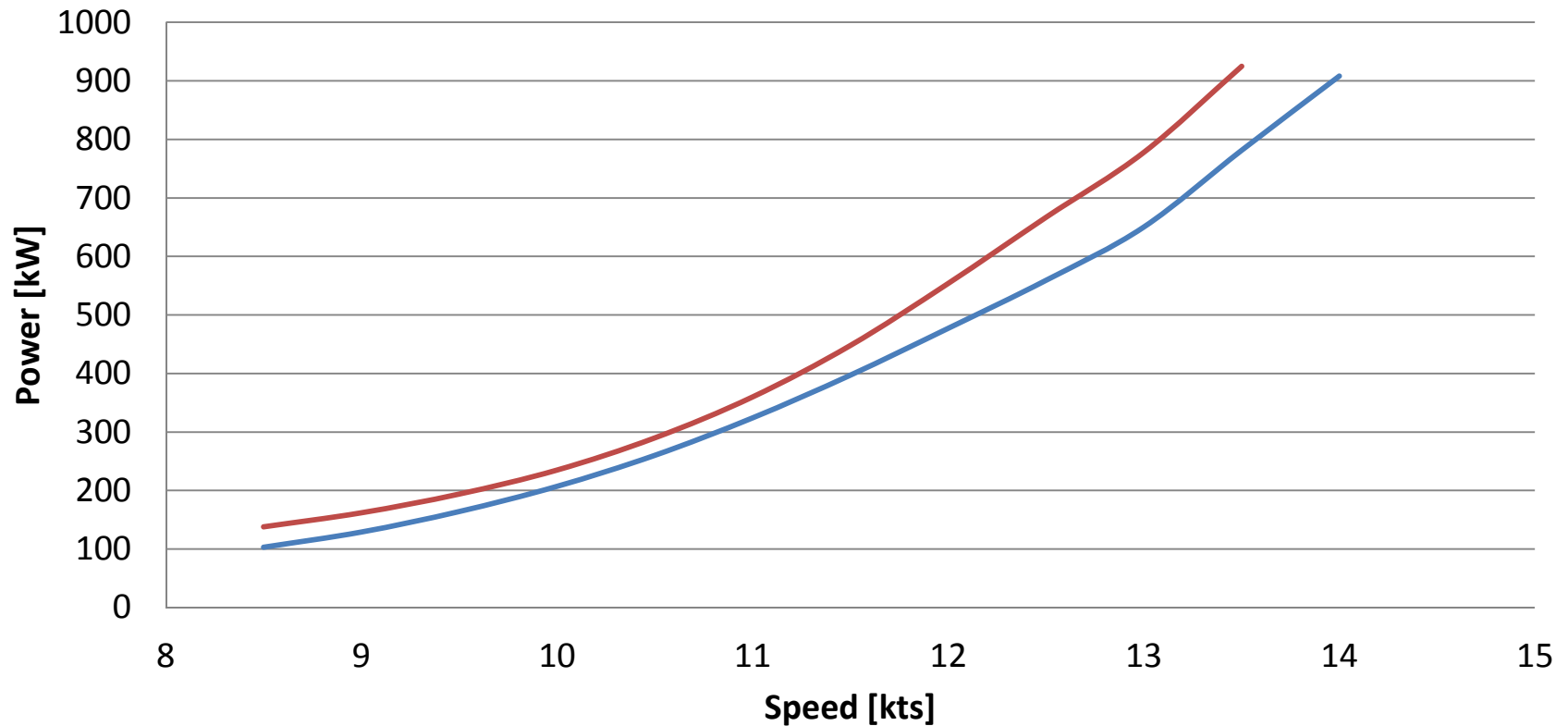
HULL: PROPELLER

J



HULL: PROPELLER

Power



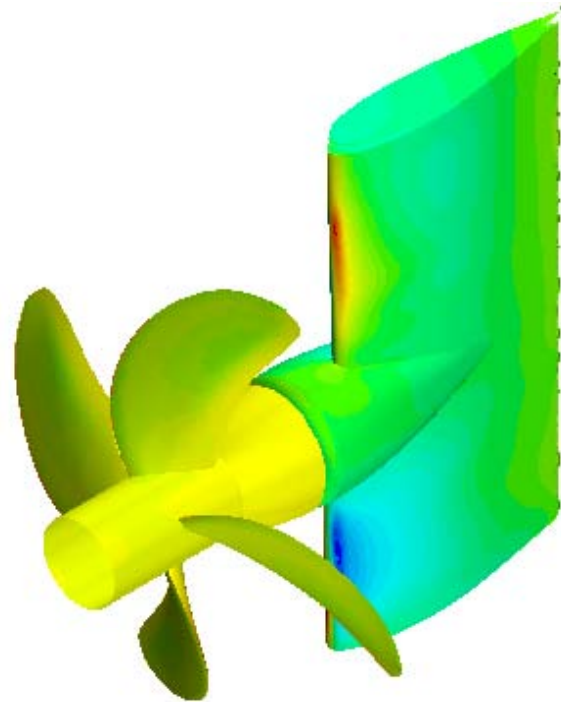
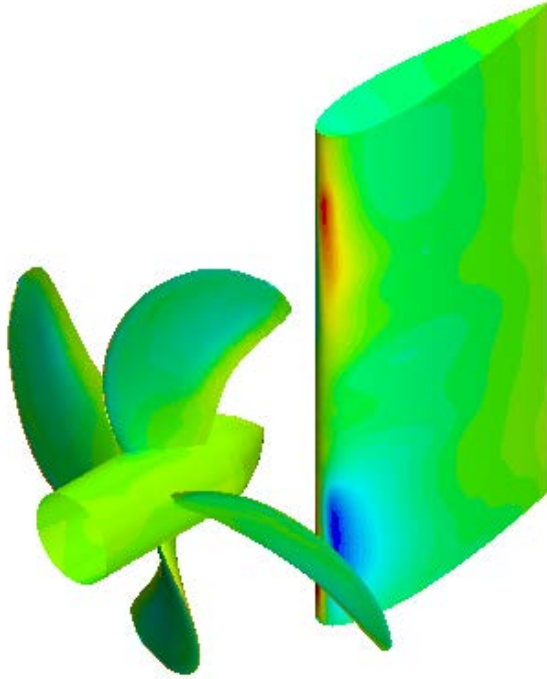
— Hull B. Rudder I. New Propeller

— Hull B. Rudder I.

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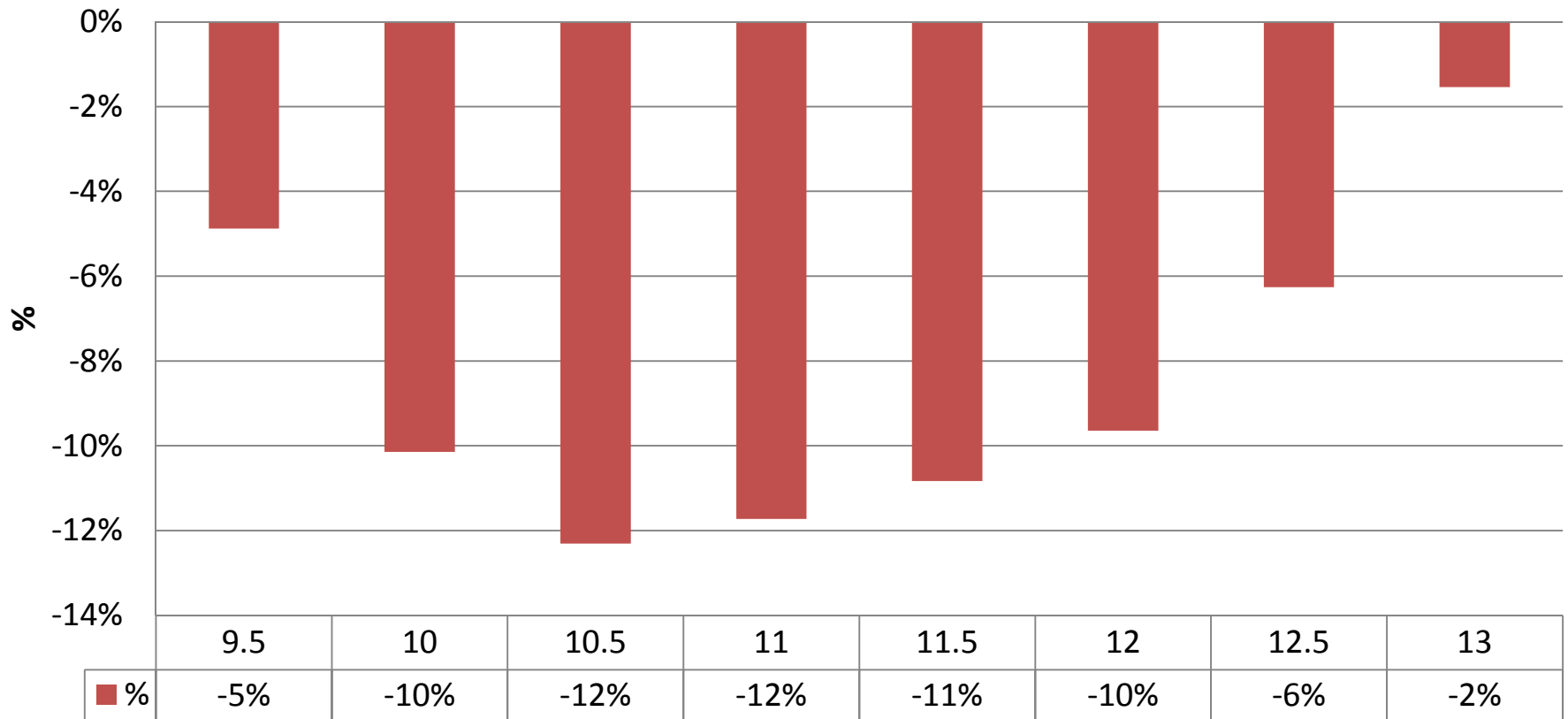
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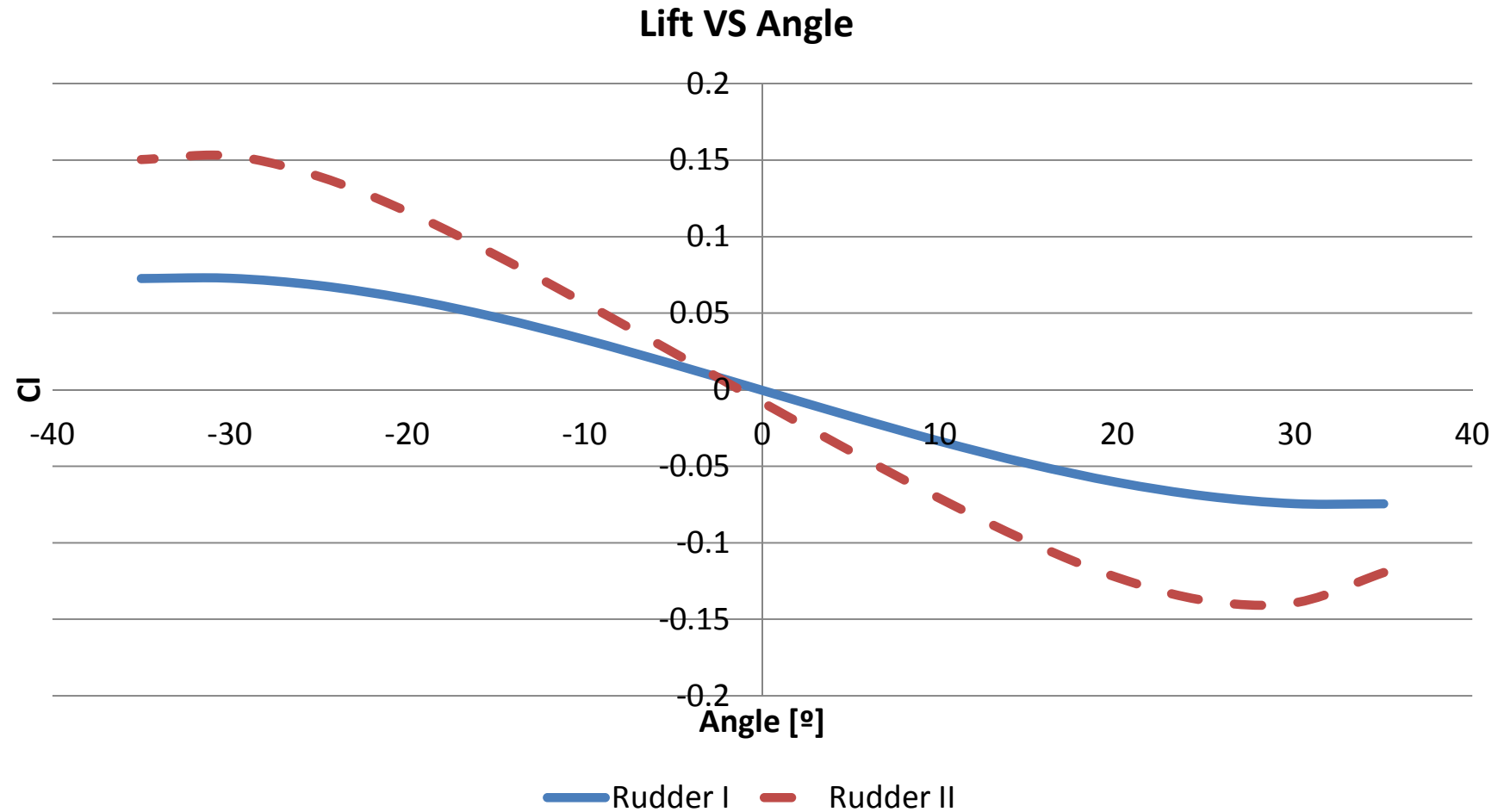


HULL: RUDDER

% Delivered Power Reduction due to new rudder



HULL: RUDDER

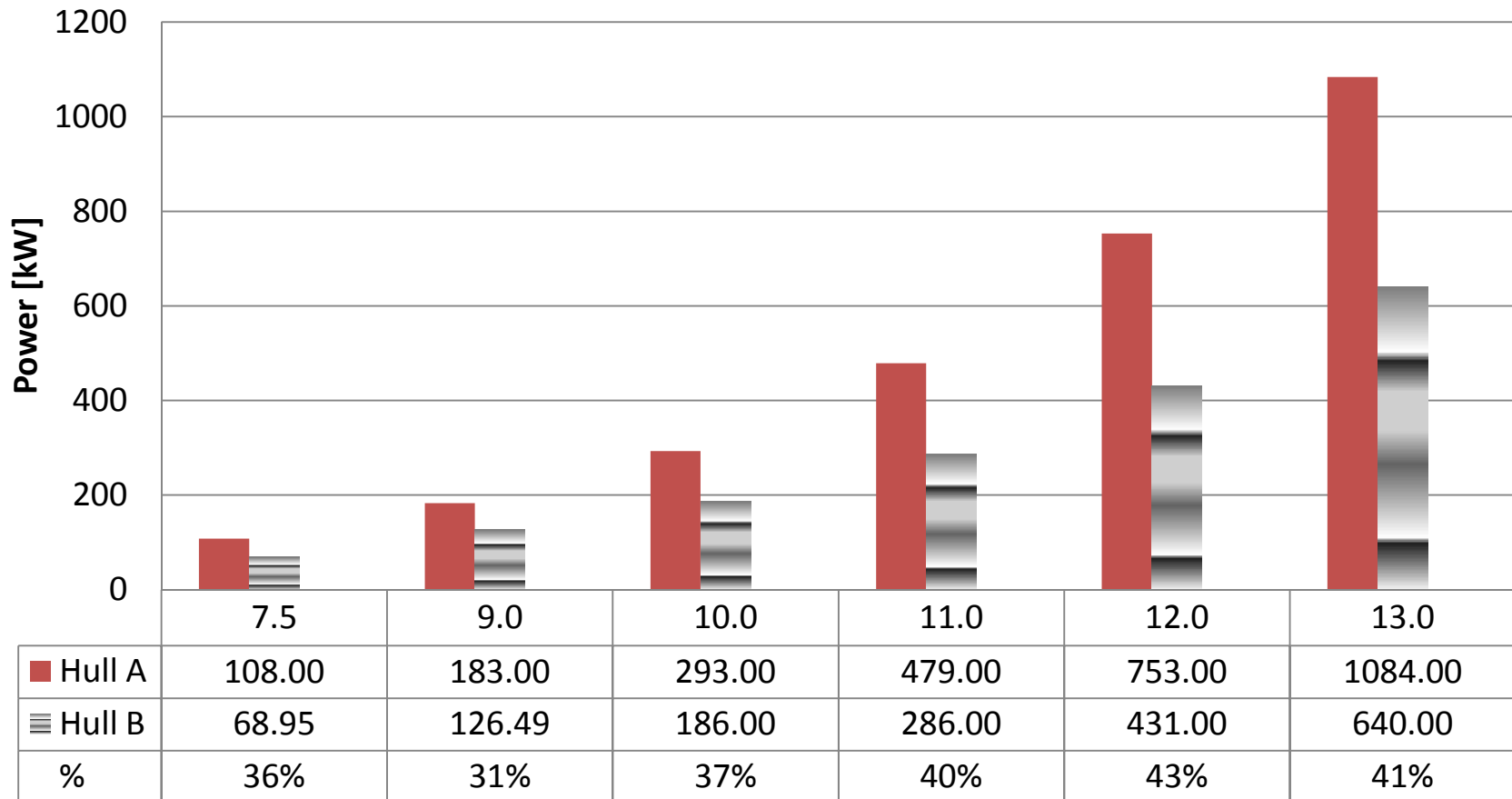


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OVERALL RESULTS

Power Vs Speed



QUESTIONS



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