



COLLOQUIUM

Conform artikel 4.6.8 van het SSNS-wb.

Vakgroep: Technische Stromingsleer

In het kader van zijn/haar doctoraalopdracht zal

(naam) Vincent L. van Beusekom

een voordracht houden getiteld:

Modelling Sheet Cavitation for 2D Hydrofoils

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Korte samenvatting:

Cavitation on marine propellers can be an important source of noise and vibration leading to discomfort for crew and passengers. In addition cavitation can also lead to propeller erosion and loss of propulsion efficiency.

A considerable amount of effort is dedicated to experimental research and modeling of the cavitation phenomenon for the purpose of improving design. The Maritime Research Institute Netherlands (MARIN) has developed a prediction method (PROCAL), based on Boundary Element Methods (BEM), to numerically simulate sheet cavitation on ship propellers and 3D hydrofoils. In the present work, studies have been carried out for 2D geometries to be able to optimize the existing prediction method for 3D in the near future. Lower-order BEM cavitation models have been optimized to increase accuracy and reduce CPU time. A higher-order BEM cavitation model has been implemented and tested for 2D steady flows on hydrofoils.

Examencommissie:

Prof.dr.ir. H.W.M. Hoeijmakers (afstudeerdocent)
Ir. A.H. Koop
Dr.ir. N.P. Kruyt
Dr. G.N.V.B. Vaz (MARIN)
Dr. G.G.M Stoffels

De afstudeerdocent,

(handtekening)

d.d. _____