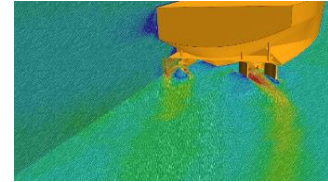


NuTTS 2021

11th – 13th October 2021, Mülheim an der Ruhr, Germany



Programme

23rd Numerical Towing Tank Symposium

Monday 11 October

12:00	Registration
12:30	Lunch
13:45	Welcome address & Honouring of Prof. Söding (V. Bertram, O. el Moctar)
14:10 - 15:50	Session 1, Chair: Bettar el Moctar
14:10	<u>Heinrich Söding</u> (Hamburg University of Technology) <i>Nonlinear seakeeping by a potential method including hull vibrations and natural seaway</i>
14:35	<u>Sime Malenica</u> (Bureau Veritas) <i>Some aspects of the local hydro structure interactions during hydrodynamic impacts</i>
15:00	<u>Dongni Yan</u> , Arun Lakshminarayanan, Tommi Mikkola, Spyros Hirdaris (Aalto Univ.) <i>Comparative study on numerical hydroelastic analysis of impact-induced loads</i>
15:25	<u>Hendrik Simonis</u> ¹ , Patrick Marleaux ² , Moustafa Abdel-Maksoud ² , Norbert Stuntz ¹ ¹ (Bundeswehr Technical Center for Ships and Naval Weapons Maritime Technology and Research) ² Hamburg Univ. of Technology <i>Dynamic stability analysis of a ship at high forward speed in calm water</i>
15:50	Coffee break
16:15 - 18:15	Session 2, Sime Malenica
16:15	<u>Apostolos Papanikolaou</u> (National Technical Univ. of Athens) <i>Holistic ship design optimisation: what is the difference?</i>
16:40	<u>Marek Kraskowski</u> (Maritime Advanced Research Centre - CTO, Gdansk Univ. of Technology) <i>A method for optimization of Olympic canoes by global shaping</i>
17:05	<u>Jörg Albrecht</u> (Solarship) <i>Optimisation of the air circulation in the design of a solar houseboat catamaran</i>
17:30	<u>Tiago Amaral</u> ¹ , Manuel Rentschler ² , João Baltazar ¹ , Guilherme Vaz ^{2,3} <i>Hydrodynamic analysis of a floating vertical cylinder</i> ¹ Instituto Superior Técnico, Lisbon, ² blueOASIS, Lisbon, ³ Univ. of Southampton
17:55	Landrini Award
18:15	Dinner

Tuesday 12 October

08:20 - 10:25

Session 3, Chair: Hoyte Raven

08:20

Bram Starke (MARIN)

On the relation between measurable (AHR) and modelled (sand-grain) roughness heights to full-scale ship resistance

08:45

Joseph Praful Tomy^{1,2}, Stephan Berger¹, Keun Woo Shin¹, Harry Bingham², Poul Anderson²

¹MAN Energy Solutions, ²Technical Univ. of Denmark (DTU)
Hydrodynamic and hydroacoustic simulations of propeller-induced URN in a hull wake-field

09:10

Carsten Schumann (SchiffsRat)

The validation of potential theory based predictions of full-scale resistance and propulsion characteristics

09:35

Lahbib Zentari¹, Simon Tödter², Bettar el Moutar²

¹Federal Waterways Engineering and Research Institute (BAW)

²University of Duisburg-Essen

Experimental and numerical investigation of gap flow between a pusher and a barge in deep and shallow water

10:00

Mariana Lopes Pinto¹, Felipe Ruggeri², Claudio Mueller Prado Sampaio¹, Kazuo Nishimoto¹, Philip von Pritzelwitz³

¹Numerical Offshore Tank, Univ. of São Paulo, ²Argonautica Engineering & Research, Brazil, ³Vale Institute of Technology (ITV, Brazil)

Numerical simulation of air lubrication system on large ore carrier

10:25

Coffee break

10:50 - 13:00

Session 4, Milovan Perić

10:50

Hoyte C. Raven (MARIN)

Credibility of wave breaking computations by volume of fluid RANS codes

11:15

Ronald A. Remmerswaal, Arthur E.P. Veldman (Univ. of Groningen)

Piecewise parabolic reconstruction methods for free-surface flow

11:40

Tiago Gomes (Instituto Superior Técnico, Lisboa), Sébastien Lemaire (MARIN), Guilherme Vaz (blueOASIS, Lisbon)

Verification study of sliding and overset grids methods

12:05

Jannes Berndt, Robinson Perić, Moustafa Abdel-Maksoud (TUHH)

Recommendations on application of the HRIC scheme for simulation of free surface waves

12:30

Yifu Zhang (Univ. of Southampton)

Evaluating the effects of drift angle on the self-propelled ship in waves using BEMt

13:00

Lunch

Tuesday 12 October

14:15 - 15:30

Session 5, Udo Lantermann

14:15

Leonie Walter¹, Jann Strybny¹,
Reinhard Hinkelmann²

¹University of Applied Sciences Emden/Leer

²Institute of Civil Engineering, Technische Universität Berlin

Simulating the transport of suspended superquadric shapes with a fully-resolved CFD-DEM algorithm

14:40

Keun Woo Shin (MAN Energy Solutions), Poul Andersen (Techn. Univ. of Denmark)

CFD prediction of cavitation inception on marine propellers

15:05

Ville Viitanen¹, J. Peltola¹, A. Jaatinen-Värri²

¹VTT Technical Research Centre of Finland Ltd.

²Lappeenranta Univ. of Technology

Eulerian-Eulerian multiphase flow and turbulence modelling of hydrofoil cavitation

15:30

Coffee break

15:55 - 18:15

Session 6, Guilherme Vaz

15:55

Andro Bakica¹, Nikola Vladimir¹, Hongil Im²

¹Univ. of Zagreb, ²Hyundai Heavy Industries Co. Ltd., Ulsan/Korea

On the propeller modelling and its effect on hydrodynamic loading and structural response of ship hull appendages

16:20

Jacob E. Lotz¹, Marco F.P. ten Eikelder², Ido Akkerman¹

¹Delft Univ. of Technology, ²Leibniz Univ. Hannover

Space-time simulation of a heaving and pitching foil with exact enforcement of time periodicity

16:45

Hemant Sagar, Bettar el Moctar (Univ. of Duisburg-Essen)

A single cavitation bubble collapse in perspective of numerical simulations

17:10

Ebrahim Kadivar¹, Mikhail V. Timoshevskiy²,

Konstantin S. Pervunin², Bettar el Moctar¹

¹Univ. of Duisburg-Essen

²Kutateladze Institute of Thermophysics, Siberian Branch of The Russian Academy of Sciences

Control of incipient cavitation on a benchmark hydrofoil using a Miniature Vortex Generator (MVG)

17:35

Andreas Peters, Udo Lantermann, Bettar el Moctar

(Univ. of Duisburg-Essen)

Compressible and multi-scale simulations of cavitating flows

18:00

Announcement of NuTTS 2022

18:15

Dinner

Wednesday 13 October

08:20 – 10:00

Session 7, Chair: Andreas Peters

08:20

Mohsen Irannezhad¹, Rickard E. Bensow¹, Martin Kjellberg²,
Arash Eslamdoost¹

¹Chalmers Univ. of Technology, ²SSPA Sweden AB

Towards uncertainty analysis of CFD simulation of ship responses in regular head waves

08:45

Stefano Lovato¹, Alex Kirichek¹, Serge Toxopeus², Just Settels², Arno Talmon^{1,3}, Geert Keetels¹

¹Delft Univ. of Technology

²Maritime Research Institute Netherlands (MARIN)

³Deltares

The resistance of a plate moving through mud: experiments and simulations

09:10

Auke van der Ploeg (MARIN)

Anderson acceleration for maritime applications

09:35

Jiawei Yu, Chaobang Yao, Liwei Liu, Zhiguo Zhang, Dakui Feng
(Huazhong Univ. of Science and Technology)

Numerical simulations of KCS self-propulsion in regular head waves

10:00

Coffee break

10:25 - 12:05

Session 8, Volker Bertram

10:25

Yannick Eberhard, Age Nammensma (Promarin)

Calculation method for aperiodic propeller designs in order to reduce underwater radiated noise

10:50

Philipp Mucha (Siemens Digital Industries Software)

Application of hybrid-temporal LES to airwake analyses of the ONR tumblehome surface combatant

11:15

Maurits van den Boogaard¹, Giacomo Alessi¹, Benoit Mallol¹, Dirk Wunsch¹, Nathan Clero¹, Dario Amadori¹, Luca Zampieri², Charles Hirsch¹

¹NUMECA-Cadence

²Neural Concept, Lausanne

Accelerating marine propeller development in early design stages using machine learning

11:40

Volker Bertram (DNV), Milovan Perić (Comet)

Chronological and critical review of steady free-surface flow computations

12:05

Lunch