Flanders Hydraulics Research
Flanders State of the Art
KNOWLEDGE CENTRE MANOEUVRING IN SHALLOW AND CONFINED WATER

MARITIME TECHNOLOGY GHENT UNIVERSITY

GHENT UNIVERSITY

5th MASHCON

International conference on ship manoeuvring in shallow and confined water

with special focus on manoeuvring in waves, wind and current.

19 – 23 May 2019

Thermae Palace, Ostend, Belgium

CONFERENCE PROGRAMME

Room Fabiola	Room Elisabeth

19 MAY 2019 (SUNDAY)

18:00 – 20:00	**Registration + Welcome reception**

20 MAY 2019 (MONDAY)

09:00 - 09:15	**Opening address by Prof. Frank Mostaert**	
09:15 – 10:00	**Invited Keynote Speech by Em. Prof. Marc Vantorre**	
10:00 – 10:50	**SESSION 1 – Confined water effects** (Chair: Em. Prof. Marc Vantorre)	
11:15 - 12:30	**SESSION 2 – Wind, waves and/or current - Benchmark data** (Chair: Prof. Bettar Ould el Moctar)	**SESSION 3 – Full-scale measurements** (Chair: Dr. Carl-Uwe Böttner)
13:30 - 14:45	**SESSION 4 – Wind, waves and/or current** (Chair: Mr. Frans Quadvlieg)	**SESSION 5 – Full-scale measurements** (Chair: Prof. Alexander Härting)
15:00 – 15:50	**SESSION 6 – Wind, waves and/or current - Benchmark data** (Chair: Prof. Bettar Ould el Moctar)	**SESSION 7 – Simulators** (Chair: Prof. Yoshitaka Furukawa)
16:15 – 17:30	**SESSION 8 - Wind, waves and/or current - Benchmark data** (Chair: Prof. Zao-Jian Zou)	**SESSION 9 – Shallow water effects** (Chair: Dr. Katrien Eloot)
19:00 - 21:00	**Barbecue**	

21 MAY 2019 (TUESDAY)

09:00 – 09:45	**Invited Keynote Speech by Prof. Andrés Cura-Hochbaum**	
09:45 – 10:35	**MARC VANTORRE HONOURING SYMPOSIUM – Pt. 1** (Chair: Prof. Andrés Cura-Hochbaum)	
10:50 – 11:35	**Invited Keynote Speech by Dr. Vicky Stratigaki**	
11:35 – 12:25	**MARC VANTORRE HONOURING SYMPOSIUM – Pt. 2** (Chair: Dr. Vicky Stratigaki)	
13:30 – 15:10	**SESSION 10 – Wind, waves and/or current** (Chair: Dr. Carl-Uwe Böttner)	**SESSION 11 – Shallow and confined water** (Chair: Prof. Guillaume Delefortrie)
15:35 - 16:50	**SESSION 12 - Shallow water effects** (Chair: Dr. Tim Gourlay)	**SESSION 13 – Ship – ship interaction** (Chair: Prof. Yoshitaka Furukawa)
19:30 – 23:00	**Conference Dinner**	

22 MAY 2019 (WEDNESDAY)

09:00 – 12:00	**Technical visit of the Towing Tank for Manoeuvres in Shallow Water**
13:30 – 14:15	**Invited Keynote Speech by Prof. Hironori Yasukawa**
14:15 – 15:20	**SESSION 14 – Wind, waves and/or current** (Chair: Prof. Hironori Yasukawa)
15:20 - 16:55	**SESSION 15 – Numerical modelling** (Chair: Prof. Evert Lataire)
16:55 – 17:00	**Closing Words**

23 MAY 2019 (THURSDAY)

09:00 – 13:00	**Optional excursion : Technical Visit of the Port of Zeebrugge**

20 MAY 2019 (MONDAY)

08:00 - 09:00	**Registration**
09:00 - 09:15	**Opening address by Prof. Frank Mostaert**
09:15 – 10:00	**Invited Keynote Speech by Prof. Marc Vantorre**
	SESSION 1 – Confined water effects (Chair: Prof. Marc Vantorre)
10:00 – 10:25	*Maneuvering Hydrodynamic Derivatives and Course Stability of a Ship Close to A Bank (WWC023)* Hironori Yasukawa Department of Transportation and Environmental Systems, Hiroshima University, Japan
10:25 - 10:50	*Calibrating and measuring wakes and drag forces of inland vessels in confined water in a towing tank (WWC059)* Clément Caplier, Guillaume Gomit, Germain Rousseaux, Damien Calluaud, Ludovic Chatellier and Laurent David Pprime Institute, CNRS, University of Poitiers, ISAE-ENSMA, France
10:50 - 11:15	**Refreshment break**

	SESSION 2 – Wind, waves and/or current - Benchmark data (Chair: Prof. Bettar Ould el Moctar)	**SESSION 3 – Full-scale measurements** (Chair: Dr. Carl-Uwe Böttner)
11:15 - 11:40	*Sailing in shallow water waves with the DTC container carrier: Open model test data for validation purposes (WWC001)* Thibaut Van Zwijnsvoorde, Manases Tello Ruiz, Guillaume Delefortrie and Evert Lataire Flanders Hydraulics Research, Belgium ; Maritime Technology Division, Ghent University, Belgium	*Full scale measurement of ship motions to validate strip theory (WWC015)* Butteur Mulumba Ntamba Ntamba, Bernhard Schwarz-Röhr, Chen Zhang and Alexander Härting Cape Peninsula University of Technology, South Africa ; Jade Hochschule, Germany ; Ghent University, Belgium ; Universität Oldenburg, Germany
11:40 - 12:05	*Benchmarking of DIFFRAC, FATIMA, HydroSTAR, MOSES, NEMOH, OCTOPUS, PDStrip, RAPID, SEAWAY, SlenderFlow and WAMIT against measured vertical motions of the Duisburg Test Case container ship in shallow water (WWC006)* Tim Gourlay, Evert Lataire, Guillaume Delefortrie, Luca Donatini, Manases Tello Ruiz, Daniel Veen, Tim Bunnik, Reint Dallinga Perth Hydro, Australia ; Maritime Technology Division, Ghent University, Belgium ; Flanders Hydraulics Research, Belgium ; Bentley Systems, Australia ; MARIN, The Netherlands	*Estimation of the center of rotation for a ship in real sea state environment (WWC016)* Chen Zhang, Alexander Härting, Butteur Mulumba Ntamba Ntamba and Bernhard Schwarz-Röhr Jade Hochschule, Germany ; Cape Peninsula University of Technology, South Africa ; Universität Oldenburg, Germany ; Ghent University, Belgium
12:05 - 12:30	*Uncertainty quantification of hydrodynamic forces on the DTC model in shallow water waves using CFD and non-intrusive polynomial chaos method (WWC021)* Li Xia, Shuai Yuan, Zao-Jian Zou and Lu Zou School of Naval Architecture, Ocean and Civil Engineering, Shanghai Jiao Tong University, China ; State Key Laboratory of Ocean Engineering, Shanghai Jiao Tong University, China	*Verification of RAOs in sea trials (WWC017)* Bernhard Schwarz-Röhr, Alexander Härting, Marc Mansuy, Marc Vantorre, Jeroen Verwilligen, Butteur Ntamba Ntamba and Chen Zhang Jade Hochschule, Germany ; Cape Peninsula University of Technology, South Africa ; Universität Oldenburg, Germany ; Maritime Technology Division, Ghent University, Belgium ; Flanders Hydraulics Research, Belgium

12:30 - 13:30	**Lunch**

	SESSION 4 – Wind, waves and/or current (Chair: Mr. Frans Quadvlieg)	**SESSION 5 – Full-scale measurements** (Chair: Prof. Alexander Härting)
13:30 - 13:55	*Predicting manoeuvring capabilities of a DTMB Ship in CFD with dynamically controlled surfaces (WWC045)* Inno Gatin, Vuko Vukčević and Hrvoje Jasak Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, Croatia	*Application of novel system identification methodology for finding roll damping and restoring parameters by using the measured response at sea (WWC043)* Mohammadreza Javanmardi, Chris Hens, Jack Bucher and Gregory Hibbert OMC International, Melbourne, Australia
13:55 - 14:20	*Simulation of the effect of installed power minimisation on ship motion (WWC046)* Emmanuel Irimagha, Zhiqiang Hu, Richard Birmingham, and Michael Woodward Newcastle University, UK ; University of Tasmania, Australia	*Sea trials for determination of manoeuvring characteristics in shallow water conditions (WWC032)* Hanne Jansch and Carl-Uwe Böttner Federal Waterways Engineering and Research Institute (BAW), Germany
14:20 - 14:45	*Parameter estimation for a ship's roll response model in shallow water using an intelligent machine learning method (WWC051)* Changyuan Chen, Manases Tello Ruiz, Guillaume Delefortrie, Tianlong Mei, Evert Lataire and Marc Vantorre Ghent University, Belgium ; Flanders Research Hydraulics, Belgium ; Shanghai Jiao Tong University, China	*Full-scale measurements of vertical motions on ultra large container vessels in Scheldt estuary (WWC036)* Jeroen Verwilligen, Katrien Eloot, Marc Mansuy and Marc Vantorre Flanders Hydraulics Research, Belgium ; Maritime Technology Division, Ghent University, Belgium
14:45 – 15:00	**Refreshment break**	

	SESSION 6 – Wind, waves and/or current **Benchmark data** (Chair: Prof. Bettar Ould el Moctar)	**SESSION 7 – Simulators** (Chair: Prof. Yoshitaka Furukawa)
15:00 – 15:25	*CFD-based numerical prediction of vertical motions and resistance for DTC container carrier in shallow water waves (WWC022)* Shuai Yuan, Li Xia, Zao-Jian Zou and Lu Zou School of Naval Architecture, Ocean and Civil Engineering, Shanghai Jiao Tong University, China ; State Key Laboratory of Ocean Engineering, Shanghai Jiao Tong University, China	*Description of hydro/meteo data in ship manoeuvring simulators: a survey on the state of the art (WWC031)* Luca Donatini, Marc Vantorre, Jeroen Verwilligen and Guillaume Delefortrie Maritime Technology Division, Ghent University, Belgium ; Flanders Hydraulics Research, Belgium
15:25 – 15:50	*Free running maneuvering tests of the DTC hull in calm water and regular waves with focus on uncertainty analysis based on repetition tests (WWC018)* Øyvind Rabliås and Trygve Kristiansen Dept. of Marine Technology, Norwegian University of Science and Technology, Norway ; SINTEF Ocean, Norway	*On the assessment of ship squat and wave motions for large containerships in shallow water in a real time maneuvering simulator (WWC042)* Eduardo A. Tannuri Universidade de São Paulo, São Paulo, Brazil
15:50 - 16:15	**Refreshment break**	

	SESSION 8 - Wind, waves and/or current **Benchmark data** (Chair: Prof. Zao-Jian Zou)	**SESSION 9 – Shallow water effects** (Chair: Dr. Katrien Eloot)
16:15 - 16:40	*Numerical assessment of added resistance in waves of the DTC container ship in finite water depths (WWC055)* Ivana Martić, Guillermo Chillcce, Manases Tello Ruiz, Jorge Ramirez, Nastia Degiuli and Bettar Ould El Moctar Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, Croatia ; Institute of Ship Technology, Ocean Engineering and Transport Systems (ISMT), the University of Duisburg-Essen, Germany ; Maritime Technology Division, Ghent University, Belgium ; Knud e Hansen A/S, Denmark	*Analysis of the flow conditions between the bottoms of the ship and of the waterway (WWC033)* Carl-Uwe Böttner, Pascal Anschau and Ivan Shevchuk Federal Waterways Engineering and Research Institute (BAW), Germany ; Schiffbau-Versuchsanstalt Potsdam, Germany ; Institute for Fluid Dynamics and Ship Theory, Hamburg University of Technology, Germany
16:40 – 17:05	*RANS evaluation of the DTC's vertical motion sailing in finite water depth waves (WWC056)* Guillermo Chillcce, Ivana Martić, , Manases Tello Ruiz, Jorge Ramirez, Nastia Degiuli and Bettar Ould El Moctar Institute of Ship Technology, Ocean Engineering and Transport Systems (ISMT), the University of Duisburg-Essen, Germany ; Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, Croatia ; Maritime Technology Division, Ghent University, Belgium ; Knud e Hansen A/S, Denmark	*A nautical approach to the effect of ship parameters on wave impact on the intertidal river bank in the bend of Bath (WWC008)* Abed Benmestoura, Deirdre Luyckx, Peter Bueken and Stijn Temmerman Antwerp Maritime Academy, Belgium ; Department of Biology, University of Antwerp, Belgium
17:05 - 17:30	*A modular mathematical approach to predict the maneuvering ability of Duisburg Test Case in regular waves (WWC039)* Omer Kemal Kinaci, Omer Faruk Sukas and Sakir Bal Faculty of Naval Architecture and Ocean Engineering, Istanbul Technical University, Turkey	*Numerical investigation of scale effects on squat in shallow water (WWC035)* Ivan Shevchuk, Carl-Uwe Böttner and Nikolai Kornev Technical University Hamburg, Germany ; Federal Waterways Engineering and Research Institute (BAW), Germany ; University of Rostock, Germany

19:00 - 21:00	**Barbecue**

21 MAY 2019 (TUESDAY)

8:00 – 09:00	**Registration**
	MARC VANTORRE HONOURING SYMPOSIUM
09:00 – 09:45	**Invited Keynote Speech by Prof. Andrés Cura-Hochbaum**
	MARC VANTORRE HONOURING SYMPOSIUM – Pt. 1 (Chair: Prof. Andrés Cura-Hochbaum)
09:45 – 10:10	*Investigation of the nominal and effective propeller inflow for a family of inland waterway vessels (WWC009)* Benjamin Friedhoff, Katja Hoyern, Sven List and Matthias Tenzer Development Centre for Ship Technology and Transport Systems (DST), Germany
10:10 – 10:35	*Robustness and quality of squat predictions in shallow water conditions based on RANS-calculations (WWC014)* Jonas Bechthold and Marko Kastens Federal Waterways Engineering and Research Institute (BAW), Germany
10:35 – 10:50	**Refreshment break**
10:50 – 11:35	**Invited Keynote Speech by Dr. Vicky Stratigaki**
	MARC VANTORRE HONOURING SYMPOSIUM – Pt. 2 (Chair: Dr. Vicky Stratigaki)
11:35 – 12:00	*Shallow-water effects in ship model testing and at full scale (WWC010)* Hoyte C. Raven MARIN, The Netherlands
12:00 – 12:25	*Simulation study of approach manoeuvre in lightering and reverse lightering operations (WWC025)* Masaaki Sano and Hironori Yasukawa Department of Transportation and Environmental Systems, Hiroshima University, Japan
12:25 - 13:30	**Lunch**

	SESSION 10 – Wind, waves and/or current (Chair: Dr. Carl-Uwe Böttner)	**SESSION 11 – Shallow and confined water** (Chair: Prof. Guillaume Delefortrie)
13:30 – 13:55	*An experimental study on the captive model test of KCS in regular waves (WWC037)* Hujae Choi, Dong Jin Kim, Yeon Gyu Kim, Dong Jin Yeo, Kunhang Yun and Gyeong Jung Lee Korea Research Institute of Ships and Ocean Engineering (KRISO), Rep. of Korea	*Shallow water power correction for high-speed vessels (WWC002)* Jan Richter, Lars-Uve Schrader, Oliver Reinholz Hamburg Ship Model Basin (HSVA), Germany
13:55 - 14:20	*The influence of wave drift forces coefficients in the assessment of navigable areas of ports and harbours exposed to high waves. Effect of vessel speed and wave spectrum considered (WWC012)* Raul Redondo, Juan Carlos Carmona and Raul Atienza Siport 21, Spain	*Shallow water effects on ship-generated waves (WWC011)* Qingsong Zeng, Cornel Thill and Robert Hekkenberg Maritime and Transport Technology, Delft University of Technology, The Netherlands
14:20 - 14:45	*Numerical and experimental study on the wave–body interaction problem with the effect of forward speed and finite water depth in regular waves (WWC064)* Tianlong Mei, Guillaume Delefortrie, Manases Tello Ruiz, Changyuan Chen, Evert Lataire, Marc Vantorre and Zaojian Zou School of Naval Architecture, Ocean and Civil Engineering, Shanghai Jiao Tong University, China ; Maritime Technology Division, Ghent University, Belgium ; Flanders Hydraulics Research, Belgium ; State Key Laboratory of Ocean Engineering, Shanghai Jiao Tong University, China	*Coupling dynamic mooring analysis with sailing vessel effects for the estimation of mooring loads. A case study (WWC052)* Damián Villaverde Vega, Bart Verheyen and Francisco Aracil IMDC, Belgium
14:45 - 15:10	*Study on the maneuvering simulation of a ship with wave effect in regular waves (WWC019)* Yeon-Gyu Kim, Dong Jin Yeo, Dong-Jin Kim, Kunhang Yun, Gyeong-Joong Lee, Bo-Woo Nam and Min-Guk Seo Korea Research Institute of Ships and Ocean Engineering (KRISO), Rep. of Korea	*Manoeuvring simulation models for inland ships (WWC061)* Frans Quadvlieg, Chris Willemsen, Wytze de Boer and Guido Oud MARIN, The Netherlands

15:10 - 15:35	**Refreshment break**

	SESSION 12 - Shallow water effects (Chair: Dr. Tim Gourlay)	**SESSION 13 – Ship – ship interaction** (Chair: Prof. Yoshitaka Furukawa)
15:35 - 16:00	*The naval battle of Actium and the myth of the ship-holder : The effect of bathymetry (WWC007)* Johan Fourdrinoy, Clément Caplier, Yann Devaux, Germain Rousseaux, Areti Gianni, Ierotheos Zacharias, Isabelle Jouteur, Paul Martin, Julien Dambrine, Madalina Petcu and Morgan Pierre CNRS – Université de Poitiers – ISAE-ENSMA, Institut Pprime, France ; University of Patras, Greece ; Université de Poitiers, Forellis, France ; Université de Montpellier, France ; Université de Poitiers, Laboratoire de Mathématiques et Applications, France	*Detailed assessment of navigable areas for encounter manoeuvres by means of numerical models and real time manoeuvring simulation (WWC013)* Lourdes Pecharroman, Raul Atienza, Carlos Cal, Raul Redondo and Miguel de Ros Siport 21, Spain
16:00 - 16:25	*Numerical study on the effect of operating water depth on the turning maneuver of a container ship (WWC020)* Akhil Balagopalan and P Krishnankutty Department of Ocean Engineering, Indian Institute of Technology Madras, India	*Transient response of a moored vessel induced by a passing ship (WWC003)* Liang Li and Zhi-Ming Yuan Department of Naval Architecture, Ocean and Marine Engineering, University of Strathclyde, UK
16:25 - 16:50	*Shallow water surge resistance identification for inland vessels (WWC034)* Arne Eggers, Gerben Peeters, Peter Slaets and Maarten Vanierschot Mechanical Engineering Technology Cluster TC , KU Leuven, Belgium	*An economical algorithm for computation of ship to ship interaction forces in real time (WWC004)* Grigory Vilenskiy SimTech Ltd., Russia

19:30 – 23:00	**Conference Dinner**

22 MAY 2019 (WEDNESDAY)

09:00 – 12:00	**Technical visit of the Towing Tank for Manoeuvres in Shallow Water**
12:30 – 13:30	**Lunch**
13:30 – 14:15	**Invited Keynote Speech by Prof. Hironori Yasukawa**
	SESSION 14 – Wind, waves and/or current (Chair: Prof. Hironori Yasukawa)
14:15 – 14:40	*Initial and steady turning characteristics of KRISO container ship (KCS) in regular waves (WWC065)* Dong Jin Kim, Kunhang Yun, Dong Jin Yeo, Yeon Gyu Kim Korea Research Institute of Ships & Ocean Engineering (KRISO), Rep. of Korea
14:40 - 15:05	*Real-time estimation of the ship maneuverable range in wind (WWC050)* Toshio Iseki Tokyo University of Marine Science and Technology Japan
15:05 - 15:20	**Refreshment break**

	SESSION 15 – Numerical modelling (Chair: Prof. Evert Lataire)
15:20 - 15:55	*Numerical modelling of the muddy layer effect on ship squat and resistance (WWC060)* Sami Kaidi, Mohamed Ali, Emmanuel Lefrançois and Hassan Smaoui CEREMA-DtecEMF, France ; Sorbonne universités, Université de technologie de Compiègne, laboratoire Roberval, France
15:55 - 16:20	*Estimation of mathematical model for ship maneuvering in waves based on estimation-before-modeling technique (WWC058)* MyungJun Jeon, Hyeon Kyu Yoon and Dong Jin Kim Changwon National University, Korea ; Korea Research Institute of Ships & Ocean Engineering, Rep. of Korea
16:20 – 16:55	*Prediction of ship-lock interaction by using a modified potential flow solver (WWC005)* Zhiming Yuan Department of Naval Architecture, Ocean and Marine Engineering, University of Strathclyde, UK
16:55 – 17:00	**Closing Words by Prof. Evert Lataire**

23 MAY 2019 (THURSDAY)

09:00 – 13:00	**Optional excursion:** **Technical visit to the Port of Zeebrugge**