Hans Bihs

Professor, PhD

Trondheim, Norway
Phone: + 47 905 81 674

Email: hans.bihs@ntnu.no
Homepage: http://www.reef3d.com

Employment

since 09/2023	**Founder and Managing Director** *REEF* Consulting AS, Trondheim, Norway
since 12/2020	**Professor** at the research group Marine Civil Engineering, Department of Civil and Environmental Engineering, NTNU Trondheim, Norway
12/2015 - 12/2020	**Associate Professor** at the research group Marine Civil Engineering, Department of Civil and Environmental Engineering, NTNU Trondheim, Norway
08/2012 - 12/2015	**Post-Doc** at the research group Marine Civil Engineering, Department of Civil and Transport Engineering, NTNU Trondheim, NTNU Trondheim, Norway
08/2011 - 07/2012	**Adjunct Associate Professor** at the research group Marine Civil Engineering, Department of Civil and Transport Engineering, NTNU Trondheim, Norway
09/2010 - 07/2012	**Research Scientist** at the Coast and Harbour Research Laboratory, SINTEF, Trondheim, Norway
10/1996 - 07/2006	**Working constructions** (a total of 54 weeks); open trench sewer pipe constructions, manned pipe jacking and industrial constructions with Friedrich Rempke GmbH & Co.KG in Hagen, Germany

Education

08/2006 - 09/2010	**PhD-Student** at the Department of Hydraulic and Environmental Engineering, NTNU Trondheim; Thesis title: Three-Dimensional Numerical Modeling of Local Scouring in Open Channel Flow"; *(Defense: May 2011)*
10/2001 - 03/2006	**Civil Engineering** (M.Sc.) at the TU Braunschweig, Germany, specialization in hydraulic engineering, water and waste water treatment and construction management
07/2000 - 04/2001	**Military service** with the Heeresmusikkorps 2 (Military Band) in Kassel, Germany

08/1997 - 07/1998	**Exchange student** in Roxbury, New York; scholarship of the German Bundestag and the Congress of the United States of America
09/1991 - 06/2000	**Hildegardis-School** of the Augustin Convent in Hagen, Germany
08/1987 - 07/1991	**Henry-van-de-Velde Primary School** in Hagen, Germany

Skills

Expertise	CFD (Computational Fluid Dynamics) Numerical Methods, Programming, High Performance Computing Wave Hydrodynamics, Wave Modeling Wave-Structure Interaction, Floating Structures Fluid Mechanics, Turbulence, Open Channel Flow Sediment Transport, Local Scour, Coastal Dynamics Multiphase Flow, Stratified Flow, Granular Flow
Programming	C++ Fortran, MPI
Software	REEF3D, ParaView, SSIIM, STAR-CCM+ Latex, AutoCAD, Tecplot, Mac OS, Linux, Windows
Languages	German (native speaker) English (fluent) Norwegian (fluent)

Software Development

since 2008	**REEF3D**, an Open-Source three-dimensional CFD program for the numerical calculation of complex free surface flows with the level set method. www.reef3d.com
since 2008	**DIVEMesh**, an Open-Source mesh generation software for the open-source CFD code REEF3D www.reef3d.com/source-code/
2006 -2010	**Gridmeister**, a free program for the automated generation of structured and curvilinear grids for SSIIM. http://sourceforge.net/projects/gridmeister/

2006 - 2010 **SSIIM**, an established computational fluid dynamics (CFD) program to model water flow and sediment transport in rivers and lakes. Extending the model through programming several plugins.
http://folk.ntnu.no/nilsol/cfd/

Research Grants

B-WAVEs: Bottom Fixed Offshore Wind Turbines in Extreme Waves
(2024-2027)
One PhD Student at NTNU Trondheim.
Researchers at SINTEF Ocean
National cooperation with SINTEF Ocean and the Norwegian Meteorological Institute
Industry Partners: Equinor, DNV, Aker Solutions and COWI
Funded by the Research Council of Norway, KPN Project.
Budget: 17.0 million NOK (ca. 1,700,000 €)
Role: Proposal, main supervisor the PhD Student.

Improved parameterisation of NNBF in 2DH coastal area models to better inform coastal hazard prediction
(2023-2024)
International cooperation with JBA Consulting, United Kingdom, under contract of the US Army Corps of Engineers
Budget: ca. 195.000 NOK (ca. 19,500 $)
Role: Technial Advisor.

Coastal Wave Modelling in the World Surfing Reserve of Ericeira
(2023-2024)
One Post-Doc at NTNU Trondheim.
International cooperation with BlueOASIS, Ericeira, Portugal
Funded by the Portugal-Norway EEA grants
Budget: ca. 150.000 NOK (ca. 15,000 €)
Role: Proposal, Project Collaborator.

PARTRES: Particle Resolving Fluid-Sediment Interaction
(2023-2027)
Five PhD-students at NTNU Trondheim.
Three Post-Docs at NTNU Trondheim.
Funded by ERC Consolidator Grant
Budget: 29 million NOK (ca. 2,9 €), from EU: 20 million NOK (ca. 2,0 €)
Role: Proposal, Project Manager, PhD-student and Post-Doc main supervisor.

MAPLE: Marine Plastic Pollution: Environmental impact and life cycle scenarios
(2022-2026)
Four PhD-students at NTNU Trondheim.
Funded by NTNU
Budget: 2.5 million NOK (ca. 250,000 €)
Role: Proposal, Work package leader, PhD-student supervisor.

DIGICOAST: Next-Generation Coastal Modeling for Wave, Current and Sediment Transport Impact on Coastal Infrastructure,
(2021-2024)
One PhD-student at NTNU Trondheim.
Funded by the Department of Civil and Environmental Engineering
Budget: 2.5 million NOK (ca. 250,000 €)
Role: Proposal, Project Manager, PhD-student main supervisor.

NumSiSSI: Development of numerical methods for modelling ship-generated waves and their interaction with embankments,
(2020-2024)
Joint research project with the TU Braunschweig, Germany and the Federal Waterways Engineering Research Institute (BAW), Germany
Budget: 0.5 million NOK (ca. 50,000 €)
Role: Project Collaborator.

IPIRIS: Improving Ship Performance in Real Sea States,
(2020-2024)
Two PhD Students at NTNU Trondheim.
Researchers at SINTEF Ocean
National cooperation with SINTEF Ocean
Industry Partners: Kongsberg Maritime, Havyard, Vard Design
Funded by the Research Council of Norway, KPN Project.
Budget: 15.0 million NOK (ca. 1,500,000 €)
Role: Proposal, main supervisor of the 2 PhD Students.

SolidShore: Solutions to Current and Future Problems on Natural and Constructed Shorelines, Eastern Baltic Sea,
(2020-2024)
One Post-Doc at NTNU Trondheim.
International cooperation with the Tallinn University of Technology, Estonia; Klaipeda University, Lithuania; Latvian Institute of Aquatic Ecology
Funded by the Estonia-Norway EEA grants
Budget: ca. 9.0 million NOK (ca. 900,000 €)
Role: Proposal, Post-Doc main supervisor.

High-Resolution Slope Stability Analysis with Integrated Hydrodynamic Modelling,
(2019-2021)
One Post-Doc at NTNU Trondheim.
Funded by the IV Faculty
Budget: 1.5 million NOK (ca. 155,000 €)
Role: Proposal, Project Manager, Post-Doc main supervisor.

High-Resolution Numerical Modelling of Flexible Fish Cage Structures,
(2017-2021)
One PhD Student and one Post-Doc at the NTNU Trondheim.
Researchers at SINTEF Ocean
National cooperation with SINTEF Ocean
International cooperation with the IIT Bombay, India and University Hannover, Germany
Funded by the Research Council of Norway, Havbruk2 Toppforsk Project.
Budget: 11.9 million NOK (ca. 1,229,000 €)
Role: Proposal, Project Manager, PhD and Post-Doc main supervisor.

An Integrated Numerical Modeling Approach for the Accurate Calculation of Wave Propagation
(2016-2019)
One PhD Student at NTNU Trondheim.
Funded by Statens Vegvesen/E39.
Budget: 3.79 million NOK (ca. 392,000 €)
Role: Proposal, PhD main supervisor.

Hydrodynamic Loads on Offshore Wind Turbine Substructures due to Nonlinear Irregular Breaking, High Steep and Extreme Waves,
(2015-2018)
National cooperation with SINTEF Ocean
International cooperation with the Department of Ocean Engineering at IIT Madras, India; one PhD student and one Post-Doc at NTNU Trondheim, two PhD students at the IIT Madras.
Funded by the Research Council of Norway, INDNOR program.
Budget: 5.0 million NOK (ca. 517,000 €)
Role: Proposal, PhD main supervisor and Post-Doc co-supervisor.

3DFLOAT - Floating Structures
(2015-2017)
One Post-Doc at NTNU Trondheim.
Funded by the IVT Faculty, Statens Vegvesen/E39 and internal funding.
Budget: 1.5 million NOK (ca. 155,000 €)
Role: Proposal, Post-Doc co-supervisor.

Vulnerability to the Arctic Coast due to Climate Change
(2014-2018)
International cooperation with the Institute of Hydroengineering at the Polish Academy of Science, Gdansk, Poland; one PhD student at NTNU Trondheim, several researchers at the Institute of Hydroengineering.
Funded by the Norwegian-Polish Research Program.
Budget: 8.87 million NOK (ca. 916,000 €)
Role: Proposal, researcher, PhD co-supervisor.

OWC Wave Energy Converters for Combined Clean Energy and Coastal Protection
(2012-2015)
National cooperation with SINTEF Ocean
International cooperation with the Department of Ocean Engineering at IIT Madras, India; one PhD student at NTNU Trondheim, one PhD student at the IIT Madras.
Funded by the Research Council of Norway, INDNOR program.
Budget: 5.7 million NOK (ca. 589,000 €)
Role: Proposal, researcher, PhD co-supervisor

Other Research Project Participations

HAWA-III JIP - Shallow Water Initiative
(2022-2024)
Joint Industry Project, headed by MARIN.
Role: Verifier.

Reproducible Computational Fluid Dynamics (CFD) Modeling Practices for Offshore Applications
(2019-2022)
Joint Industry Project, headed by TechnipFMC.
Role: Project Collaborator.

Environmental Innocuous Pile Head Breakwater for the Mitigation of Coastal Erosion
(since 2019)
Funded by Scheme for Promotion of Academic and Research Collaboration (SPARC), India.
Collaboration with Dr. Pruthviraj Umesh; National Institute of Technology Surathkal, India.
Role: Project Collaborator.

World of Wild Waters (WoWW) - Gamification of Natural Hazards
(since 2019)
Funded by NTNU Trondheim, NTNU Digital Transformation project.
Role: PhD co-supervisor.

Landslides triggered by hydro-meteorological processes - Klima2050
(since 2016)
Funded by the Research Council of Norway, SFI project.
Role: PhD co-supervisor.

Wave forces on offshore wind turbine substructures, WP3: Novel support structures & floater, NOWITECH
(2011-2015)
Funded by the Research Council of Norway, FME project.
Role: PhD co-supervisor.

Tsunami wave generation in hydropower reservoirs due to rockslides.
(2011-2012)
Funded by NVE.
Role: Project Leader for SINTEF Coast and Harbour Laboratory

Laboratory experiments and numerical modelling of tsunamis generated by rock slides into fjords.
(2011-2012)
University of Oslo, funded by the Research Council of Norway, FRINATEK program.
Role: Project Leader for SINTEF Coast and Harbour Laboratory

Sustainable Arctic Marine and Coastal Technology, SAMCoT, WP6: Coastal Technology.
(2011-2012)
Funded by the Research Council of Norway, SFI project.
Role: Researcher for SINTEF Coast and Harbour Laboratory

Numerical Modeling of Erosion Damages during Floods
(2006-2010)
Funded by the Research Council of Norway, FRINATEK program.
Role: PhD student

Student Supervision

Post-Docs and Researchers

Elyas Larkermani (since 8/2024), *Fluid-sediment-large element interaction*, Supervisor.

Tobias Martin (2021-2022), *Numerical Modeling of Ship Hydrodynamics in Real Sea Conditions*, Supervisor.

Weizhi Wang (2019-2022), *High-resolution slope stability analysis with integrated hydrodynamic modelling*, Supervisor.

Csaba Pakozdi (2019), *Wave Modeling with Fully-Nonlinear Potential Flow Solvers*, sabbatical (80%) from SINTEF Ocean, Supervisor.

Arun Mulky Kamath (2015-2021), *Numerical Modeling of Waves Propagation, Wave Hydrodynamics and Wave-Structure Interaction with REEF3D*, Supervisor.

Mayilvahanan Alagan Chella (2015-2017), *Numerical Modeling of Extreme and Breaking Wave Forces on Offshore Wind Substructures*, Supervisor.

PhD Students

Yue Jia (since 10/2025), *Modeling of coastal erosion for extreme events*, Supervisor.

Kelley Ruehl (since 08/2025), *Understanding fatigue wave loads on jacket structures for offshore wind turbines*, Supervisor.

Paul Dupin (since 08/2025), *Analysis and optimization of wind turbine operations*, Co-Supervisor.

Çağan Birant Pekküçük (since 04/2025), *nonlinear wave kinematics and wave loads on offshore wind substructures*, Supervisor.

Thomas Becker (since 02/2025), *Hydro-morphodynamical modeling*, Supervisor.

Tina Ebrahimi (since 6/2024), *Particle resolving modeling of sediment transport and soil behavior*, Supervisor.

Alexander Hanke (since 10/2023), *Particle resolving modeling of sediment transport*, Supervisor.

Fabian Knoblauch (since 09/2022), *Numerical Modeling of Ship Hydrodynamics in Real Sea Conditions*, Supervisor.

Ahmed Marhoon (since 08/2022), *Origin and Impact of Plastic Products*, Co-Supervisor.

Ahmet Soydan (since 07/2021), *Numerical Modeling of Ship Hydrodynamics in Real Sea Conditions*, Supervisor.

Ronja Ehlers (since 06/2021), *Coastal Modeling for Wave, Current and Sediment Transport Impact on Coastal Infrastructure*, Supervisor.

Elyas Larkermani (2019-2024), *Numerical Modelling of Air Flow and Heat Transfer in Buildings with REEF3D*, Co-Supervisor.

Gebray Habtu Alene (2019-2024), *Modelling and Visualization of Runout of Flow Landslides within World of Wild Water - Gamification of Natural Hazards*, Co-Supervisor.

Michal Pavlicek (2019-2021), *Hydrodynamic and hydromorphological simulation of floods in steep waterways*, Co-Supervisor.

Tobias Martin (2017-2021), *High-resolution numerical modelling of floating flexible fish cages with REEF3D*, successfully defended, Supervisor.

Weizhi Wang (2016-2019), *An Integrated Numerical Modeling Approach for the Accurate Calculation of Wave Propagation with REEF3D*, successfully defended, Supervisor.

Petter Fornes (since 2016), *Landslides Triggered by Hydro-Meteorological Processes: Debris Flow Modeling with REEF3D*, Co-Supervisor.

Ankit Aggarwal (2015-2018), *Numerical Modelling of Irregular waves and Wave Forces on Offshore Wind Substructures*, successfully defended, Supervisor.

Nadeem Ahmad (2014-2018), *Numerical Modeling of Sediment Transport under Arctic Conditions*, successfully defended, Co-Supervisor.

Arun Mulky Kamath (2012-2015), *CFD based Investigation of Wave-Structure Interaction and Hydrodynamics of an Oscillating Water Column Device*, successfully defended, Co-Supervisor.

Mayilvahanan Alagan Chella (2010-2015), *Numerical Modeling of Breaking Wave Forces*, successfully defended, Co-Supervisor.

Visiting Researchers

Gang Wang (09/2019 - 10/2021), PhD Student, Fishery College, Ocean University of China, funded by China Scholarship Council (CSC), *PANS Simulation Methods and Fluid-Structure interaction applied in the fishing facilities*, Hosting Supervisor.

Ting Cui (09/2019 - 12/2020), PhD Student, College of Shipbuilding Engineering, Harbin Engineering University, China, funded by China Scholarship Council (CSC), *Modeling internal solitary waves and the interaction of the structure*, Hosting Supervisor.

Feng Xing (01/2020 - 02/2021), Assistant Professor, Marine Engineering College, Dalian Maritime University, China, funded by China Scholarship Council (CSC), *Numerical Modeling of Ship Seakeeping with REEF3D*, Hosting Supervisor.

Arun Kumar (08/2019 - 11/2019), PhD Student, Department of Ocean Engineering, NITK Surathkal, India, funded by SPARC *Environmental Innocuous Pile Head Breakwater for the Mitigation of Coastal Erosion*, Hosting Supervisor.

Lilei Mao (10/2018 - 10/2019), PhD Student, School of Transportation, Southeast University Nanjing, China, funded by China Scholarship Council (CSC), *Numerical Modeling of Sediment Movement Induced by Passing Ships in Inland-restricted Waterway with REEF3D*, Hosting Supervisor.

Vijaya Kumar Govindasamy (06/2018 - 06/2018), PhD Student, Department of Ocean Engineering, IIT Madras, India, *Working on focused breaking wave impact on offshore wind substructures with REEF3D*, Hosting Supervisor.

Rameeza Moireen (01/2016 - 02/2016), PhD Student, Department of Civil Engineering, IIT Bombay, India, *Working on extreme and focused wave impact on offshore structures with REEF3D*, Hosting Supervisor.

Adria Moreno Miquel (09/2015 - 02/2016), PhD Student, Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, Italy, *Working on floating wave energy devices with REEF3D*, Hosting Supervisor.

John Ashlin (04/2015 - 06/2015), PhD Student, Department of Ocean Engineering, IIT Madras, India, *Working on oscillating water column ocean energy device hydrodynamics with REEF3D*, Hosting Co-Supervisor.

Master Students

Edgar Jesus Chavez Luna (2024), Master thesis, CoMEM ERASMUS+ student, *Numerical Investigation of Wave Run-Up on Offshore Wind Monopiles*, Supervisor.

Mirriam Ngoma (2024), Master thesis, CoMEM ERASMUS+ student, *Numerical Modelling of Coastal Wave Transformations over Varying Bathymetry Using REEF3D::NHFLOW*, Supervisor.

Daniel Owoyomi (2024), Master thesis, CoMEM ERASMUS+ student, *Numerical Modelling of Scour around the Foundation of Offshore Wind Turbines*, Supervisor.

Halvor Lund Aslaksen (2024), Master thesis, *Fluid-Structure-Interaction Coupling between Project Chrono and REEF3D*, Supervisor.

Vilde Malmei (2023), Master thesis, *Hydrodynamic modeling of floating offshore wind turbinces*, Supervisor.

Albert Bosch Rico (2023), Master thesis, ERASMUS exchange student (home university: UPC Barcelona), *Coastal wave modeling*, Supervisor.

Lars Ottar Jorde (2022), Master thesis, *Numerical investigation of flow and scour around a circular cylinder*, Supervisor.

Lorenzo Ciconte (2022), Master thesis, ERASMUS exchange student (home university: University of Florence, Italy) *Numerical modeling of coastal erosion*, Supervisor.

Ayda Mirzaahmadi (2022), Master thesis, *Numerical investigation of sediment transport in open-channel flow*, Co-Supervisor.

Adrian Filip (2021), Project thesis, *Breaking Waves on Monopiles using the REEF3D framework*, Supervisor.

Knut Reidulff (2021), Project thesis, *Wave environment assessment at a Norwegian harbor for land-based aquaculture facilities using a combined numerical approach*, Supervisor.

Ronja Ehlers (2020), Master thesis, ERASMUS exchange student (home university: Technical University of Munich, Germany), *Using a 2D Shallow Water Equations model with dynamic pressure extension to simulate open channel flow with low relative submergence*, Co-Supervisor.

Yueyuan Jin (2020), Master thesis, CoMEM ERASMUS+ student, *Overtopping of coastal structures using REEF3D*, Supervisor.

Ingebrigt Davik (2020), Master thesis, *Large-Scale Numerical Modeling of Swell Waves in Bjørnafjorden Using the Phase-Resolving Wave Model REEF3D*, Supervisor.

Brage Lysø (2020), Master thesis, *Numerical study on aquaculture structures*, Supervisor.

Carlos Dempwolff (2019), Master thesis, ERASMUS exchange student (home university: University of Hannover, Germany), *Numerical Modelling of Wave Interaction with Floating structures and Moored Floating Structures with REEF3D*, Supervisor.

Daniil Popov (2019), Master thesis, CoMEM ERASMUS+ student, *Numerical Modeling Submerged Tunnel Hydrodynamics with REEF3D*, Supervisor.

Khaled Damdam (2019), Master thesis, CoMEM ERASMUS+ student, *Combined Submerged and Floating Breakwater Wave Attenuation Modeling with REEF3D*, Supervisor.

Lim, Sung-Soo (2019), Master thesis, CoMEM ERASMUS+ student, *Coupled Fluid-Structure Interaction Simulations of Deformable Aquaculture Structures with REEF3D*, Supervisor.

Niccolo Nuti (2018), Master thesis, ERASMUS exchange student (home university: University of Florence, Italy), *Numerical Modeling of Extreme Flooding of the River Arno with REEF3D*, Supervisor.

Alonso Madrigal (2018), Master thesis, ERASMUS exchange student (home university: University of Algarve, Portugal), *Large Scale Wave Modeling for Aquaculture Site Identification with REEF3D*, Supervisor.

Lluis Fernandez Maza (2018), Master thesis, ERASMUS exchange student (home university: UPC Barcelona, Spain), *Calculation of Wave Forces due to extreme events in the coastal region using REEF3D*, Supervisor.

Mohamed Elakel (2018), Master thesis, CoMEM ERASMUS+ student, *Investigation of Wave Transformation and Breaking Processes in the Coastal Zone using REEF3D*, Supervisor.

Seimur Shirinov (2018), Master thesis, ERASMUS exchange student (home university: University of Bologna, Italy), *Calculation of Wave Forces on Offshore Wind Turbine Jacket Sub-structures using REEF3D*, Supervisor.

Mammadov Tural (2018), Master thesis, ERASMUS exchange student (home university: University of Bologna, Italy), *Numerical Modelling of Wave Interaction with Floating structures and Moored Floating Structures with REEF3D*, Supervisor.

Jiayi Zheng Lu (2017), Master thesis, ERASMUS exchange student (home university: University of Valencia, Spain), *Modeling of Moored Floating Structures under Wave Conditions with REEF3D*, Supervisor.

Gabor Fleit (2016), Master thesis, ERASMUS exchange student (home university: University of Budapest, Hungary), *Numerical Modeling of Sediment Transport under Complex Free Surface Flows with REEF3D*, Co-Supervisor.

Athul Sasikumar (2016), Master thesis, CoMEM ERASMUS+ student, *Numerical Modelling of Wave Hydrodynamics and Wave Interaction with Porous Breakwaters using REEF3D*, Supervisor.

Amarachaharam Thevaher (2016), Master thesis, CoMEM ERASMUS+ student, *Numerical Modelling of Focused Waves and Focused Wave Forces with REEF3D*, Supervisor.

Ankit Aggarwal (2015), Master thesis, CoMEM ERASMUS+ student, *Numerical Modelling of Irregular Waves and Irregular Wave Forces with REEF3D*, Co-Supervisor.

Mohammad Saud Afzal (2013), Master thesis, CoMEM ERASMUS+ student, *3D Numerical Modelling of Sediment Transport under Currents and Waves*, Co-Supervisor

Arun Mulky Kamath (2012), Master thesis, CoMEM ERASMUS+ student, *Waves Forces on Structures Using REEF3D*, Supervisor.

Muhammad Tedy Asyikin (2012), Master thesis, CoastMAR student, *CFD Simulation of Vortex Induced Vibrations of a Cylindrical Structure*, Supervisor.

Bachelor Students

Halvor Lund Aslaksen (2024), Project thesis, *Exploring a coupling between Project Chrono and REEF3D*, Supervisor.

Vilde Malmei (2022), Project thesis, *Numerical Analysis of Irregular Sea States for Offshore Wind Installations*, Supervisor.

Lars Ottar Jorde (2021), Project thesis, *Numerical investigation of flow and scour around a circular cylinder*, Supervisor.

Knut Reidulff (2020), Project thesis, *Phase-resolved Wave Modeling of Skarberget Ferry Terminal with REEF3D::FNPF*, Supervisor.

Ashlesh S Sharma (2020), Project thesis, *CFD of Aquaculture Cages Using REEF3D*, Co-Supervisor.

Markus Witt (2019), Project thesis, ERASMUS internship (home university: Technical University Dresden, Germany), *Non-Hydrostatic Depth-Averaged Modeling of Sediment Transport under Wave Condi-tions*, Supervisor.

Ingebrigt Davik (2019), Project thesis, *Numerical study on wave propagation in Norwegian fjords for the E39 project*, Supervisor.

Brage Lysø (2019), Project thesis, *Numerical study on aquaculture nets*, Supervisor.

Yueyuan Jin (2019), Internship report, CoMEM ERASMUS+ student, *Benchmark Testing of REEF3D:: FNPF*, Supervisor.

Bärbel Herges (2017), Project thesis, ERASMUS exchange student (home university: University of Applied Science Karlsruhe, Germany), *Modeling of Sediment Transport with REEF3D*, Supervisor.

Lluis Fernandez Maza (2017), Project thesis, ERASMUS exchange student (home university: UPC Barcelona, Spain), *Benchmarking REEF3D's Numerical Wave Tank*, Supervisor.

Thibaut Lucari (2017), Internship report, ERASMUS internship (home university: ENTPE Lyon, France), *Adaptability of SWASH for a Norwegian Coastal Case*, Supervisor.

Javier Sanchez Tundidor (2017), Project thesis, ERASMUS exchange student (home university: UPC Barcelona, Spain), *Rockslide Generated Impulse Waves with REEF3D*, Supervisor.

Kristina Heveling (2017), Project thesis, ERASMUS exchange student (home university: Karlsruhe Institute of Technology, Germany), *Modeling Wave Conditions at Andenes Habor with REEF3D*, Supervisor.

Maximilian Völlinger (2017), Project thesis, ERASMUS exchange student (home university: University of Hannover, Germany), *Vertical Wave Forces on Offshore Structures with REEF3D*, Supervisor.

Jiayi Zheng Lu (2016), Project thesis, ERASMUS exchange student (home university: University of Valencia, Spain), *Modeling of Large Floating Structures under Wave Conditions with REEF3D*, Supervisor.

Tanguy Paquereau-Gaboreau (2016), Summer project/Internship report, ERASMUS internship (home university: Grenoble University, France) *Numerical simulation of three-dimensional stratified flows on smooth and rough bottom using an innovative CFD software: REEF3D*, Supervisor.

Alvaro Garcia Torres (2016), Bachelor thesis, ERASMUS exchange student (home university: UPC Barcelona, Spain), *Numerical Modelling of Run-up and Overtopping with REEF3D*, Supervisor.

Gabor Fleit (2015), Bachelor thesis, ERASMUS exchange student (home university: University of Budapest, Hungary), *Numerical Modeling of Open Channel Flow with REEF3D*, Co-Supervisor.

Ankit Aggarwal (2014), Project thesis, Master thesis, CoMEM ERASMUS+ student, *Numerical Modeling of Wave Propagation and Wave Forces with REEF3D*, Co-Supervisor.

Mohammad Saud Afzal (2012), Project thesis, Master thesis, CoMEM ERASMUS+ student, *Wave propagation over a rugged topography Mehamn harbor Norway using SWAN model*, Co-Supervisor.

Pedagogical Training

2020	**Pedagogical Portfolio** module for development of a pedagogical portfolio for higher-education teachers at NTNU Trondheim, 20 hour course.
2016-2017	**PEDUP** pedagogical program for professors at NTNU Trondheim, 100 hour course.
2016	**PhD Supervisor Seminar** held by the Faculty of Engineering, Science and Technology, NTNU Trondheim.

Teaching

since 2021 **Hydromechanics** (TVM4116, BSc-course, NTNU Trondheim),
Role: teaching hydrostatics, drag, lift, wave kinematics, and wave forces lectures (50%)

since 2018 **Advanced Numerical Modeling of Marine Free Surface Flows** (BA8404, PhD-course, NTNU Trondheim)
Role: Teaching about numerical and programming aspects for modeling of wave hydrodynamics based on REEF3D open-source software (100%), started and designed a new course from scratch, formally responsible for the course

2016 - 2019 **Arctic Infrastructures in a Changing Climate** (AT-301, MSc-course, guest lecturer UNIS Svalbard) Role: teaching wave modeling and sediment transport in coastal areas lectures (6 hrs every year)

2015 - 2018 **Arctic Marine Civil Engineering** (TBA4265, Masterkurs, NTNU Trondheim),
Role: teaching numerical modeling of waves and the physics of wave forces (ca. 14 %)

2014 - 2018 **Advanced Topics in Port and Coastal Engineering** (BA8403, PhD-course, NTNU Trondheim),
Role: teaching about numerical and programming aspects of CFD for wave propagation (ca. 80%)

since 2013 **Coastal Engineering** (TBA4270, MSc-course, NTNU Trondheim), teaching wave modeling and sediment transport
Role: Teaching wave modeling, loads and sediment transport (100 %), transforming the course content away from analytical approaches towards state-of-the-art wave, flow and sediment transport modeling, formally responsible for the course since 2017

2011 - 2015 **Port and Coastal Facilities** (TBA4145, MSc-course, NTNU Trondheim)
Role: teaching the numerical wave modeling lecture (ca 8 %)

2006 - 2009 **Hydromechanics** (TVM4116, BSc-course, NTNU Trondheim), Research Assistant for Exercises and Laboratory
Role: conducting exercise hours; build-up, organization and conducting the hydraulic lab exercises

2006 - 2010 **Numerical Modeling and Hydraulics** (TBA4155, MSc-course, NTNU Trondheim), Research Assistant for Exercises
Role: conducting all exercise hours and correcting the homework

2003 - 2005 **Structural Analysis** (MSc-course, TU Braunschweig), Student Assistant
Role: hands-on exercises with the students of the first semester and correction of homework for semesters 1-3

PhD Committees

2022 **Member of the Doctoral Committee** for Jesper Roland Kjægaard Qwist, *Investigation of finite volume methods for free surface flows with focus on the numerical description of the air-water interface*; Supervisor: Prof. Erik Damgaard Christensen, Technical University of Denmark, Department of Mechanical Engineering.

2020 **Examiner** for the PhD-thesis of Vivek Francis, *Hydrodynamic Characteristics of Thin Porous Barriers*; Supervisors: Prof. Balaji Ramakrishnan, IIT Bombay, Department of Ocean Engineering; Prof. Murray Rudman, Monash University, Department of Mechanical and Aerospace Engineering

2020 **Examiner** for the PhD-thesis of Manoj Kumar, *A Hybrid Numerical Model for Simulating Wave Structure Interaction*; Supervisor: Assoc. Prof. Sriram Venkatachalam, IIT Madras, Department of Ocean Engineering.

2019 **Member of the Doctoral Committee** for Charalambos Frantzis, *Accelerating CFD Simulations of Two-Fluid Flows: Application in Numerical Wave Tanks*; Supervisor: Prof. Dimokratis Grigoriadis, University of Cyprus, Department of Mechanical Engineering.

2019 **Administrator** for the PhD committee of Marnix van den Berg, *Discrete Numerical Modelling of the Interaction Between Broken Ice Fields and Structures*; Supervisor: Prof. Sveinung Løset, NTNU Trondheim, Department of Civil and Environmental Engineering.

2018 **Administrator** for the PhD committee of Ying Tu, *Wave Slamming Forces on Offshore Wind Turbine Jacket Substructures*; Supervisor: Prof. Michael Muskulus, NTNU Trondheim, Department of Civil and Environmental Engineering.

2018 **Formal Examiner** for the PhD-thesis of Aidan Bronson Bharath, *Numerical Analysis of Arrays of Wave Energy Converters*; Supervisor: Assoc. Prof. Irene Penesis, University of Tasmania, Australian Maritime College, National Centre for Maritime Engineering & Hydrodynamics.

2017 **Formal Examiner** for the PhD-thesis of Ahmad Elhanafi, *Performance and Survivability of Offshore Oscillating Water Column Wave Energy Converters*; Supervisor: Assoc. Prof. Gregor Macfarlane, University of Tasmania, Australian Maritime College, National Centre for Maritime Engineering & Hydrodynamics.

2017 **International Expert Reviewer** for the PhD-thesis of Adria Moreno Miquel, *Development, analysis, and comparison of two concepts for wave energy conversion in the Mediterranean Sea*; Supervisor: Assoc. Prof. Renata Archetti, University of Bologna, Department of Civil, Chemical, Environmental, and Materials Engineering.

2016 **Member of the Doctoral Committee** for Pietro Danilo Tomaselli, *A methodology for air entrainment in breaking waves and their interaction with a mono-pile*; Supervisor: Prof. Erik Damgaard Christensen, Technical University of Denmark, Department of Mechanical Engineering.

Conference Oganization and Editorial Work

since 2020 **JHCS - Editor**, Journal of Hydraulic and Coastal Structures, founding member of the editorial board, currently establishing a community driven open-access journal.

since 2020 **RENEW - Scientific Committee**, International Conference on Renewable Energies Offshore RENEW, Lisbon, Portugal.

since 2020 **OMAE - Topic Organizer**, Wave Mechanics and Wave Effects, Ocean Engineering Symposium, Conference on Ocean, Offshore and Arctic Engineering.

2019 - 2020 **OMAE - Topic Organizer**, Unsteady Hydrodynamics, Vibrations, Acoustics and Propulsion, Ocean Engineering Symposium, Conference on Ocean, Offshore and Arctic Engineering.

2019 **Coastal Structures - Scientific Committee**, Coastal Structures Conference 2019, Hannover, Germany.

2018 - 2019 **Session Organizer** for Coastal Engineering at "Ocean Week 2019 - Oceans in Change", NTNU Oceans, a strategic research area on oceanic science and technology.

2018 - 2019 **JMSE - Guest Editor**, Journal of Marine Science and Engineering, Special Issue "Computational Fluid Dynamics for Ocean Surface Waves".

since 2017 **OMAE - Topic Organizer**, Free Surface Flow Topic, CFD & FSI Symposium, Conference on Ocean, Offshore and Arctic Engineering.

since 2017 **JOMAE - Associate Editor**, ASME Journal of Offshore Mechanics and Arctic Engineering.

2016-2019 **MekIT - Scientific Comitee**, Member of the scientific committee of the MekIT conference (National Conference on Computational Mechanics), which takes place in Trondheim every two years.

Research Proposal Referee

since 2023 **Proposal Reviewer**, European Research Council (ERC).

since 2020 **Referee** in the domain "Applied and Engineering Sciences", Dutch Research Council (NWO).

since 2018 **Program Council Member** of the research program "Marine Energy Conversion", Swedish Energy Agency (Energimyndigheten).

Research Management

2020-2021 **Deputy Head of Department for Research**, Department of Civil and Environmental Engineering, NTNU Trondheim.

2020-2022 **Head of Research Group**, Marine Civil Engineering, Department of Civil and Environmental Engineering, NTNU Trondheim.

2019-2021 **Research Committee**, Engineering Faculty, NTNU Trondheim.

2019-2020 **Research and Innovation Committee**, Department of Civil and Environmental Engineering, NTNU Trondheim.

2016-2019 **CoMEM** - Master of Science in Coastal and Marine Engineering and Management (Erasmus Mundus Masterprogramm at the NTNU Trondheim), Participation in the student program organization and preparation of a new EU proposal.

Publications

Citations

- Google Scholar: 4274 citations, h-index: 39
- Researchgate: 3522 citations, h-index: 35
- Scopus: 3156 citations, h-index: 33

Journal Articles

112. Soydan A., Wang G., Wang W., Bihs H. (2025), Numerical Investigation of Open-Ocean Aquaculture Structure Motions and Mooring Dynamics Using REEF3D::CFD, submitted to *Journal of Offshore Mechanics and Arctic Engineering*.

111. Wang G., Jiao Z., Guan C., Soydan A., Wang W., Bihs H. (2025), Modelling Focused Breaking Wave Interactions with Pile-Net Aquaculture Structures (PNAS) Using REEF3D, submitted to *Journal of Offshore Mechanics and Arctic Engineering*.

110. Larkermani E., Soydan A., Hanke A.T., Wang W.W., Bihs H. (2025), Numerical simulation of large element interaction using coupled CFD-DEM in REEF3D, submitted to *Coastal and Offshore Science and Engineering*.

109. Ebrahimi T., Wang W.W., Bihs H. (2025), Modeling of Local Scour Around Circular Structures Using the Open-Source CFD Toolbox REEF3D, submitted to *Coastal and Offshore Science and Engineering*.

108. Wang W.W., Bihs H. (2025), Neural network-based nonlinear coastal wave forecasting using hindcast data and phase-resolving wave modeling, submitted to *Coastal and Offshore Science and Engineering*.

107. Becker T., Wang W.W., Bihs H. (2025), Modeling of Diffraction Around Breakwaters Using the Non-Hydrostatic Navier-Stokes Solver REEF3D::NHFLOW, submitted to *Coastal and Offshore Science and Engineering*.

106. Wang W.W., Christakos K., Pakozdi C., Bihs H.(2025), Down-scale marine hydrodynamic analysis at the Norwegian coast - the NORA-SARAH open framework, submitted to *Applied Ocean Research*.

105. Knoblauch F., Wang W.W., Bihs H. (2025), Development of New Free Surface Methods for a Fixed-Grid Fully Non-Linear Potential Flow Solver Using the Immersed Boundary Method, submitted to *International Journal for Numerical Methods in Fluids*.

—

104. Bihs H., Ehlers R., Wang W., (2026), A Shock-Absorbing Non-Hydrostatic Solver on σ-Grids for Wave Modeling Over Complex Bathymetry, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 148, Nr. 011902, DOI: 10.1115/1.4068917.

103. Cui T., He G., Wang W., Yuan L., Bihs H. (2026), Hydrodynamic Responses of the Semi-submersible Substructure of a Moored Floating Offshore Wind Turbine under Extreme Waves, textcolorairforceblue*Journal of Offshore Mechanics and Arctic Engineering*, Vol. 148, Nr. 012002, DOI: 10.1115/1.4068916.

102. Soydan A., Malmei V., Berthelsen P.A., Wang W.W., Bihs H.(2025), Numerical investigation and experimental validation of INO WINDMOOR semi-submersible FOWT in extreme waves, *Applied Ocean Research*, Vol. 162, Nr. 104703, DOI: 10.1016/j.apor.2025.104523.

101. Bihs H., Wang W.W. (2025), REEF3D::NHFLOW - A High-Performance Non-Hydrostatic Solver for Coastal Wave Propagation, *Coastal Engineering*, Vol. 202, Nr. 104819, DOI: 10.1016/j.coastaleng.2025.104819.

100. Soydan A., Wang W.W., Bihs H.(2025), A New Direct Forcing Immersed Boundary Method for Floating Body Simulations in Waves, *Applied Ocean Research*, Vol. 158, Nr. 104523, DOI: 10.1016/j.apor.2025.104703.

99. Larkermani E., Bihs B., Winckelmans G., Duponcheel M., Martin T., Müller B., Georges L.(2025), High-Fidelity Explicit Large Eddy Simulations of Airflows Inside Buildings using Immersed Boundaries, *Physics of Fluids*, Vol. 37, Nr. 035174, DOI: 10.1063/5.0258912.

98. Soydan A., Wang W., Bihs H. (2025), An Improved Direct Forcing Immersed Boundary Method With Integrated Mooring Algorithm for Floating Offshore Wind Turbines, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 147, Nr. 042101-1, DOI: 10.1115/1.4067117.

97. Prüter I., Spröer F., Keimer K., Lojek O., Windt C., Schürenkamp D., Bihs H., Nistor I., Goseberg N. (2025), A comprehensive numerical study on the current-induced fluid-structure interaction of flexible submerged vegetation, *Journal of Fluids and Structures*, Vol. 133, Nr. 104232, DOI: 10.1016/j.jfluidstructs.2024.104232.

96. Dempwolff L.C., Windt C., Bihs H., Holzwarth I., Melling G., Goseberg N. (2024), Resonant effects of long-period ship-induced waves near shallow coasts, *Physics of Fluids*, Vol. 36, Nr. 107126, DOI: 10.1063/5.0222727.

95. Männikus R., Wang W.W., Eelsalu M., Najafzadeh F., Bihs H., Soomere T. (2024), Modelling suitable layout for a small island harbour: a case study of Ruhnu in the Gulf of Riga, eastern Baltic Sea, *Latvian Journal of Physics and Technical Sciences*, Nr. 6, DOI: 10.2478/lpts-2024-0040.

94. Larkermani E., Bihs B., Winckelmans G., Duponcheel M., Martin T., Müller B., Georges L.(2024), Development of an Accurate Central Finite-Difference Scheme with a Compact Stencil for the Simulation of Unsteady Incompressible Flows on Staggered Orthogonal Grids, *Computer Methods in Applied Mechanics and Engineering*, Vol. 428, Nr. 117117, DOI: 10.1016/j.cma.2024.117117.

93. Dempwolff L.C., Windt C., Bihs H., Holzwarth I., Melling G., Goseberg N. (2024), Hydrodynamic coupling of multi-fidelity solvers in REEF3D with application to ship-induced wave modelling, *Coastal Engineering*, Vol. 188, Nr. 104452, DOI: 10.1016/j.coastaleng.2023.104452.

92. Reidulff K., Wang W., Kamath A., Bihs H. (2023), Wave environment analysis at a Norwegian harbour for landbased aquaculture facilities using a combined phase-averaging and phase-resolving numerical modelling approach, *Journal of Coastal and Hydraulic Structures*, Vol. 3, DOI: 10.59490/jchs.2023.0031.

91. Fleit G., Baranya S., Ehlers R., Bihs, H. (2023), Numerical modelling of flow and local scour around submerged bridge decks, *Journal of Coastal and Hydraulic Structures*, Vol. 3, DOI: 10.48438/jchs.2023.0026.

90. Wang W., Pakozdi C., Kamath A., Bihs H. (2023), Phase-resolved wave modelling in Norwegian fjords for the ferry-free E39 project, *Journal of Ocean Engineering and Marine Energy*, Vol. 9, pp. 567–586, DOI: 10.1007/s40722-023-00284-z.

89. Kamath A., Wang W., Martin T., Pakozdi C., Bihs H. (2023), Identification and Investigation of Extreme Events using an Arbitrary Lagrangian Eulerian approach with a Laplace equation Solver and Coupling to a Navier-Stokes Solver, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 145, Nr. 6, 061902, DOI: 10.1115/1.4057014.

88. Dempwolff L.C., Windt C., Melling G., Bihs H., Holzwarth I., Goseberg N. (2023), Approximating ship wave-induced hydraulic loading on estuarine groins: a conceptual numerical study, *Journal of Waterways, Port, Coastal and Ocean Engineering*, Vol. 149, Nr. 3, 021901, DOI: 10.1061/JWPED5.WWENG-19.

87. Pakozdi C., Kamath A., Wang W., Martin T., Bihs H. (2023), Efficient Calculation of Hydrodynamic Loads on Offshore Wind Substructures Including Slamming Forces, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 145, Nr. 2, 021901, DOI: 10.1115/1.4055701.

86. Wang W., Pakozdi C., Kamath A., Martin T., Bihs H. (2022), Hydrodynamic Coupling of Viscous and Non-Viscous Numerical Wave Solutions Within the Open-Source Hydrodynamics Framework REEF3D, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 144, Nr. 4, 041903, DOI: 10.1115/1.4053848.

85. Wang W., Pakozdi C., Kamath A., Bihs H. (2022), Representation of 3-h Offshore Short-Crested Wave Field in the Fully Nonlinear Potential Flow Model REEF3D::FNPF, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 144, Nr. 4, 041902, DOI: 10.1115/1.4053774.

84. Sathyanarayana A.H., Suvarna S., Umesh P., Shirlal K.G., Bihs H., Kamath A. (2022), Numerical modelling of an innovative conical pile head breakwater, *Journal of Marine Science and Engineering*, Vol. 14, Nr. 24, 4087, DOI: 10.3390/w14244087.

83. Wang G., Martin T., Huang L., Bihs H. (2022), Numerical investigation of the hydrodynamics of a submersible steel-frame offshore fish farm in regular waves using CFD, *Ocean Engineering*, Vol. 256, 111528, DOI: 10.1016/j.oceaneng.2022.111528.

82. Dempwolff C.L., Windt C., Melling G., Martin T., Bihs H., Holzwarth I., Goseberg N. (2022), The influence of the hull representation for modelling of primary ship waves with a shallow-water equation solver, *Ocean Engineering*, Vol. 266, Part 5, 113163, DOI: 10.1016/j.oceaneng.2022.113163.

81. Dempwolff C.L., Windt C., Goseberg N., Martin T., Bihs H., Melling G. (2023), Verification of a Free-Surface Pressure Term Extension to Represent Ships in a Nonhydrostatic Shallow-Water-Equations Solve, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 145, 021202-1, DOI: 10.1115/1.4056121.

80. Ting C. , He G., Jiang M., Wang W., Yuan L., Han D., Kamath A., Bihs H. (2022), Large eddy simulation of focused breaking waves and analysis of wave characteristics, *Ocean Modelling*, Vol. 179, 102122, DOI: 10.1016/j.ocemod.2022.102122.

79. Jin Y., Wang W., Kamath A., Bihs H. (2022), Numerical Investigation on Wave Overtopping at a Double-dike Defence Structure in Response to Climate Change Induced Sea Level Rise, *Fluids*, Vol. 7, Nr. 9, 295, DOI: 10.3390/fluids7090295.

78. von Häfen H., Krautwald C., Bihs H., Goseberg N. (2022), Dam-Break Waves' Hydrodynamics on Composite Bathymetry, *Frontiers in Built Environment*, DOI: 10.3389/fbuil.2022.877378.

77. Cui T., Wang W., Kamath A., Han D., Bihs H. (2022), Numerical simulation of the gravity current in the presence of waves with different characteristics, *Journal of Hydraulic Research*, Vol. 60, Nr. 5, DOI: 10.1080/00221686.2022.2064345.

76. Dempwolff L.-C, Melling G., Windt C., Lojek O., Martin T., Holzwarth I., Bihs H., Goseberg N. (2022), Loads induced by ship-generated depression waves in confined waterways - A review of current knowledge and future tasks, *Journal of Coastal and Hydraulic Structures*, Vol. 2, DOI: 10.48438/jchs.2022.0013.

75. Dutta D., Bihs H., Afzal M.S. (2022), Computational Fluid Dynamics modelling of hydrodynamic characteristics of oscillatory flow past a square cylinder using the level set method, *Ocean Engineering*, Vol. 253, DOI: 10.1016/j.oceaneng.2022.111211.

74. Wang W., Pakozdi C., Kamath A., Fouques S., Bihs H. (2022), A Flexible Fully Nonlinear Potential Flow Model for Wave Propagation over the Complex Topography of the Norwegian Coast, *Applied Ocean Research*, Vol. 253, DOI: 10.1016/j.apor.2022.103103.

73. Pakozdi C., Wang W., Kamath A., Bihs H. (2022), Application of Arbitrary Lagrangian-Eulerian Strips with Fully Nonlinear Wave Kinematics for Force Estimation, *Marine Structures*, Vol. 83, DOI: 10.1016/j.marstruc.2022.103190.

72. Martin T., Wang G., Kamath A., Bihs H. (2022), Modelling Open Ocean Aquaculture Structures using CFD and a Simulation-based Screen Force Model, *Journal of Marine Science and Engineering*, Vol. 10, Nr. 3, DOI: 10.3390/jmse10030332.

71. Wang G., Martin T., Huang L., Bihs H. (2022), A Numerical Study of the Hydrodynamics of an Offshore Fish Farm Using REEF3D, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 144, Nr. 2, DOI: 10.1115/1.4052865.

70. Martin T., Bihs H. (2022), A Computational Fluid Dynamics Approach for Modeling the Fluid–Structure Interaction of Offshore Aquaculture Cages and Waves, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 144, Nr. 2, DOI: 10.1016/j.apor.2021.102965.

69. Wang G., Martin T., Huang L., Bihs H. (2022), An improved screen force model based on CFD simulations of the hydrodynamic loads on knotless net panels, *Applied Ocean Research*, Vol. 118, Nr. 102965, DOI: 10.1016/j.apor.2021.102965.

68. Cui T., Kamath A., Wang W., Yuan L., Bihs H. (2022), Focused Plunging Breaking Waves Impact on Pile Group in Finite Water Depth, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 144, Issue 3, DOI: 10.1115/1.4053126.

67. Kamath A., Roy T., Seiffert B., Bihs H. (2022), Experimental and numerical study of waves breaking over a submerged three-dimensional bar, *Journal of Waterways, Port, Coastal and Ocean Engineering*, DOI: 10.1061/(ASCE)WW.1943-5460.0000697.

66. Martin T., Wang G., Bihs H.(2022), Numerical Modelling of the Interaction of Moving Fish Nets and Fluid,*Journal of Offshore Mechanics and Arctic Engineering*, Vol. 144, Issue 1, DOI: 10.1115/1.4051088.

65. Wang G., Martin T., Huang L., Bihs H. (2022), Modeling the Flow Around and the Hydrodynamic Drag on Net Meshes Using REEF3D, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 144, Issue 1, DOI: 10.1115/1.4051408.

64. Martin T., Bihs H. (2021), Numerical solution for modelling mooring dynamics including bending and shearing effects using a geometrically exact beam model, accepted to *Journal of Marine Science and Engineering*.

63. Pakozdi C., Wang W., Kamath A., Bihs H. (2021), Analysis of wave propagation error in a sigma grid based numerical tank and mitigation through constant truncation error based vertical spacing, *Ocean Engineering*, Vol. 239, Nr. 1, DOI: 10.1016/j.oceaneng.2021.109741.

62. Wang G., Martin T., Huang K., Bihs H. (2021), Modelling the flow around and wake behind net panels using large eddy simulations, *Ocean Engineering*, Vol. 239, Nr. 1, DOI: 10.1016/j.oceaneng.2021.109846.

61. Wang W., Pakozdi C., Kamath A., Bihs H. (2021), A fully nonlinear potential flow wave modeling procedure for full-scale simulations of sea states with various breaking wave scenarios, accepted to *Applied Ocean Research*.

60. Kamath A., Grotle E.L., Bihs H. (2021), Numerical Investigation of Sloshing under Roll Excitation at Shallow Liquid Depths and the effect of Baffles, *Journal of Marine Science and Applications*, Vol. 20, pp. 185-200, DOI: 10.1007/s11804-021-00198-y.

59. Gautam S., Dutta D., Bihs H., Afzal M.S. (2021), Three-dimensional Computational Fluid Dynamics modelling of scour around a single pile due to combined action of the waves and current using Level-Set method, *Coastal Engineering*, Vol. 170, Nr. 104002, DOI: 10.1016/j.coastaleng.2021.104002.

58. Martin T., Tsarau A., Bihs H. (2020), A Numerical Framework for Modelling the Dynamics of Open Ocean Aquaculture Structures in Viscous Fluids, *Applied Ocean Research*, Vol. 106, Nr. 102410, DOI: 10.1016/j.apor.2020.102410.

57. Martin T., Bihs H. (2020), A non-linear implicit approach for modelling the dynamics of porous tensile structures interacting with fluids, *Journal of Fluids and Structures*, Vol. 100, Nr. 103168, DOI: 10.1016/j.jfluidstructs.2020.103168.

56. Pakozdi C., Hermundstad E.M., Kamath A., Bihs H. (2020), REEF3D Wave Generation Interface for Commercial CFD Codes, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 143, Nr. 5, DOI: DOI: 10.1115/1.4048925..

55. Aggarwal A., Alagan Chella M., Bihs H., Myrhaug D. (2020), Properties and Kinematics of Breaking Irregular Waves over Slopes, *Ocean Engineering*, Vol. 216, DOI: 10.1016/j.oceaneng.2020.108098.

54. Wang W., Pakozdi C., Kamath A., Bihs H. (2020), A comparison of different wave modelling techniques in an open-source hydrodynamic framework, *Journal of Marine Science and Engineering*, Vol. 8, Issue 7, Nr. 526, DOI: 10.3390/jmse8070526.

53. Martin T., Kamath A., Bihs H. (2020), Accurate modeling of the interaction of constrained floating structures and complex free surfaces using a new quasistatic mooring model, *International Journal of Numerical Methods in Fluids*, DOI: DOI: 10.1002/fld.4894.

52. Martin T., Kamath A., Bihs H. (2020), A Lagrangian approach for the coupled simulation of fixed net structures in a Eulerian fluid model, *Journal of Fluids and Structures*, Vol. 94, pp. 1-26, DOI: 10.1016/j.jfluidstructs.2020.102962.

51. Afzal M.A. Bihs H., Kumar L. (2020), Computational Fluid Dynamics Modelling of Abutment Scour under Steady Current Using Level Set Method, *International Journal of Sediment Research*, DOI: 10.1016/j.ijsrc.2020.03.003.

50. Sasikumar A., Kamath A., Bihs H. (2020), Modelling porous coastal structures using a level set method based VRANS-solver on staggered grids, *Coastal Engineering Journal*, Vol. 62, Nr. 2, pp. 198-216, DOI: 10.1080/21664250.2020.1734412.

49. Ahmad N., Kamath A., Bihs H., (2020), 3D Numerical Modelling of Scour around a Jacket Structure with Dynamic Free Surface Capturing, *Ocean Engineering*, Vol. 200, pp. 1-15, DOI: 10.1016/j.oceaneng.2020.107104.

48. Srineash V.K., Kamath A., Murali K., Bihs H. (2020), Numerical Simulation of Wave Interaction with Submerged Porous Structures, *Journal of Coastal Research*, Vol. 36, Nr. 4, DOI: 10.2112/jcoastres-d-19-00147.1.

47. Moideen R., Beherea M.R., Kamath A., Bihs H. (2020), Numerical Simulation and Analysis of Phase Focused Breaking and Non-Breaking Wave Impact on Fixed Offshore Platform Deck, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 142, Issue 5, DOI: 10.1115/1.4046285.

46. Wang W., Martin M., Kamath A., Aggarwal A., Bihs H. (2020), An Improved Depth-Averaged Non-Hydrostatic Shallow Water Model with Quadratic Pressure Approximation, *International Journal for Numerical Methods in Fluids*, DOI: 10.1002/fld.4807.

45. Martin T., Kamath A., Bihs H. (2020), Modelling and Simulation of Moored-Floating Structures Using the Tension-Element-Method, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 142, Issue 1, DOI: 10.1115/1.4044289.

44. Bihs H., Wang W., Pakozdi C., Kamath A. (2020), REEF3D::FNPF - A Flexible Fully Nonlinear Potential Flow Solver, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 142, Issue 4, DOI: 10.1115/1.4045915.

43. Aggarwal A., Tomaselli D.T., Christensen E.D., Bihs H. (2020), CFD investigations of breaking focused wave-induced loads on a monopile and the effect of breaker location, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 142, Nr. 2 pp. 021903, DOI: 10.1115/1.4045187.

42. Wang W., Kamath A., Pakozdi C., Bihs H. (2019), Investigation of focusing wave properties in a numerical wave tank with a fully nonlinear potential flow model, *Journal of Marine Science and Engineering*, *Journal of Marine Science and Engineering*, Vol. 7, Issue 10, Nr. 375, DOI: 10.3390/jmse7100375.

41. Aggarwal A., Bihs H., Shirinov S., Myrhaug D. (2019), Estimation of breaking wave properties and their interaction with a jacket structure, *Journal of Fluids and Structures*, Vol. 91, pp. 102722, DOI: 10.1016/j.jfluidstructs.2019.102722.

40. Fleit G., Baranya S., Kramer T., Bihs, H., Jozsa J., (2019), A practical framework to assess the hydrodynamic impact of ship waves on river banks, *River Research and Applications*, Vol. 35, Nr. 9, pp. 1428-1442, DOI: 10.1002/rra.3522.

39. Aggarwal A., Alagan Chella M., Bihs H., Myrhaug D. (2019), Characteristics of breaking irregular wave forces on a monopile, *Applied Ocean Research*, Vol. 90, pp. 101846, DOI: 10.1016/j.apor.2019.06.003.

38. Moideen R., Behera M.R., Kamath A., Bihs H. (2019), Effect of girder spacing and depth on solitary wave impact on coastal bridge deck for different airgaps, *Journal of Marine Science and Engineering*, Vol. 7, Issue 5, Nr. 140, DOI: 10.17736/ijope.2019.ak31.

37. Alagan Chella M., Bihs H., Kamath A., Myrhaug D., Arntsen Ø.A. (2019), Breaking Wave Interaction with a Group of Four Vertical Slender Cylinders in Two Square Arrangements, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 141, Issue 6, DOI: 10.1115/1.4043597.

36. Ahmad N., Bihs H., Myrhaug D., Kamath A., Arntsen Ø.A. (2019), Numerical Modeling of Breaking Wave Induced Seawall Scour, *Coastal Engineering*, Vol. 150, pp. 108-120, DOI: 10.1016/j.coastaleng.2019.03.010.

35. Bihs H., Kamath A., Aggarwal A., Pakozdi C. (2019), Efficient Wave Modeling Using Non-Hydrostatic Pressure Distribution and Free Surface Tracking on Fixed Grids, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 141, Issue 4, DOI: 10.1115/1.4043179.

34. Kamath A., Fleit G., Bihs H. (2019), Investigation of Free Surface Turbulence Damping for RANS Simulations of Complex Free Surface Flows, *Water*, Vol. 11, Nr. 3, pp. 1-26, DOI: 10.3390/w11030456.

33. Alagan Chella. Bihs H., Myrhaug D. (2019), Wave impact pressure and kinematics due to breaking wave impingement on a monopile, *Journal of Fluids and Structures*, Vol. 86, pp. 94-123, DOI: 10.1016/j.jfluidstructs.2019.01.016.

32. Ahmad N., Bihs H., Myrhaug D., Kamath A., Arntsen Ø.A. (2019), Numerical Modelling of Pipeline Scour under the Combined Action of Waves and Current with Free Surface Capturing, *Coastal Engineering*, Vol. 148, pp. 19-35, DOI: 10.1016/j.coastaleng.2019.02.008.

31. Bihs H., Kamath A., Alagan Chella M., Arntsen Ø.A. (2019), Extreme Wave Generation, Breaking and Impact Simulations Using Wave Packets in REEF3D, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 141, Issue 4, DOI: 10.1115/1.4042178.

30. Alagan Chella M., Bihs H., Myrhaug D., Arntsen Ø.A. (2019), Numerical Modeling of Breaking Wave Kinematics and Wave Impact Pressures on a Vertical Slender Cylinder, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 141, Issue 5, DOI: 10.1115/1.4042265.

29. Ahmad N., Bihs H., Alagan Chella M., Arntsen Ø.A. (2019), Numerical Modelling of Arctic Coastal Erosion due to Breaking Waves Impact Using REEF3D, *International Journal of Offshore and Polar Engineering*, Vol. 29, Issue 1, pp. 33-41, DOI: 10.17736/ijope.2019.ak31.

28. Aggarwal A., Pakozdi C., Alagan Chella M., Bihs H., Myrhaug D. (2018), Free surface reconstruction for phase accurate irregular wave generation, *Journal of Marine Science and Engineering*, Vol. 6, Issue 3, Nr. 105, DOI: 10.3390/jmse6030105.

27. Sasikumar A., Bihs H., Kamath A., Musch O., Arntsen Ø.A. (2018), Numerical Investigation of Wave Kinematics and Breakwater Optimization with Varying Berm Geometry using REEF3D, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 141, Nr. 1, DOI: 10.1115/1.4040508.

26. Miquel A.M., Kamath A., Alagan Chella M., Archetti R., Bihs H. (2018), Analysis of Different Methods for Wave Generation and Absorption in a CFD based Numerical Wave Tank, *Journal of Marine Science and Engineering*, Vol. 6, Issue 2, Nr. 73, DOI: 10.3390/jmse6020073.

25. Ahmad N., Bihs H., Myrhaug D., Kamath A., Arntsen Ø.A. (2018), Three-Dimensional Numerical Modelling of Wave-Induced Scour Around Piles in a Side-by-Side Arrangement, *Coastal Engineering*, Vol. 138, pp. 132-151, DOI: 10.1016/j.coastaleng.2018.04.016.

24. Grotle E.L., Bihs H., Pedersen E., Æsøy V. (2018), CFD Simulations of Non-Linear Sloshing in a Rotating Rectangular Tank Using the Level Set Method, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 140, Issue 6, DOI: 10.1115/1.4040560.

23. Aggarwal A., Alagan Chella M., Bihs H., Pakzodi C., Berthelsen P.A., Arntsen, Ø.A. (2018), CFD Based Study of Steep Irregular Waves for Extreme Wave Spectra, *International Journal of Offshore and Polar Engineering*, Vol. 28, Nr. 2, DOI: 10.17736/ijope.2018.ak26.

22. Bihs H., Kamath A. (2017), A Combined Level Set/Ghost Cell Immersed Boundary Representation for Simulations of Floating Bodies, *International Journal for Numerical Methods in Fluids*, Vol. 83, Issue 12, pp. 905-916, DOI: 10.1002/fld.4333.

21. Grotle E.L., Bihs H., Æsøy V. (2017), Numerical Investigation of Sloshing under Roll Excitation at Shallow Liquid Depths, *Ocean Engineering*, Vol. 138, pp. 73-85, DOI: 10.1016/j.oceaneng.2017.04.021.

20. Fleit G., Baranya S., Bihs H. (2017), CFD Modeling of Varied Flow Conditions Over an Ogee-Weir, *Periodica Polytechnica Civil Engineering*, Paper Nr. 10821, pp. 1-7.

19. Kamath A., Alagan Chella M., Bihs H., Arntsen Ø.A. (2017), Shoaling and Decomposition of Breaking and Non-Breaking Waves over a Submerged Bar, *Engineering Applications of Computational Fluid Mechanics*, Vol. 11, Issue 1, pp. 450-466, DOI: 10.1080/19942060.2017.1310671.

18. Bihs H., Alagan Chella M., Kamath A., Arntsen Ø.A. (2017), Numerical Investigation of Focused Waves and their Interaction with a Vertical Cylinder using REEF3D, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 139, Issue 4, DOI: 10.1115/1.4036206.

17. Alagan Chella M., Bihs H., Muskulus M. (2017), Solitary Wave Breaking and Breaking Wave Forces on a Vertically Mounted Circular Cylinder over a Sloping Seabed, Vol. 3, Issue 1, pp. 1–19, *Journal of Ocean Engineering and Marine Energy*, DOI: 10.1007/s40722-016-0055-5.

16. Kamath A., Bihs H., Arntsen Ø.A. (2017), Study of Water Impact and Entry of Free Falling Wedge Using CFD Simulations, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 139, Issue 3, pp. 031802, DOI: 10.1115/1.4035384.

15. Ong, M.C., Kamath, A., Bihs, H., Afzal, M.S. (2017), Numerical Simulation of Free-Surface Waves past Two Partially-Submerged Horizontal Circular Cylinders in Tandem, *Marine Structures*, Vol. 52, pp. 1–14, DOI: 10.1016/j.marstruc.2016.11.002.

14. Kamath A., Alagan Chella M., Bihs H., Arntsen Ø.A. (2016), Breaking Wave Interaction with a Vertical Cylinder and the Effect of Breaker Location, *Ocean Engineering*, Vol. 128, pp. 105–115, DOI: 10.1016/j.oceaneng.2016.10.025.

13. Bihs H., Kamath A., Alagan Chella M., Aggarwal A., Arntsen Ø.A. (2016), A New Level Set Numerical Wave Tank with Improved Density Interpolation for Complex Wave Hydrodynamics, *Computers & Fluids*, Vol. 140, pp. 191–208, DOI: 10.1016/j.compfluid.2016.09.012.

12. Bihs H., Kamath A., Alagan Chella M., Arntsen Ø.A. (2016), Breaking wave interaction with tandem cylinders under different impact scenarios, *Journal of Waterways, Port, Coastal, and Ocean Engineering*, Vol. 142 (5), DOI: 10.1061/(ASCE)WW.1943-5460.0000343.

11. Fleit G., Baranya S., Rüther N., Bihs H., Kramer T., Jozsa J (2016), Investigation of the effects of ship induced waves on the littoral zone with field measurements and CFD modeling, *Water*, Vol. 8 (7), DOI: 10.3390/w8070300.

10. Kamath A., Bihs H., Alagan Chella M., Arntsen Ø.A. (2016), Upstream and Downstream Cylinder Influence on the Hydrodynamics of a Four Cylinder Group, Vol. 142 (4), *Journal of Waterways, Port, Coastal, and Ocean Engineering*, DOI: 10.1061/(ASCE)WW.1943-5460.0000339.

9. Alagan Chella M., Bihs H., Myrhaug D., Muskulus M. (2016), Hydrodynamic Characteristics of Spilling and Plunging Breakers over a Sloping Seabed, *Ocean Modelling*, Vol. 103, pp. 53-72, DOI: 10.1016/j.ocemod.2015.11.011.

8. Kamath A., Alagan Chella M., Bihs H., Arntsen Ø.A. (2015), CFD Investigations of Wave Interaction with a Pair of Large Tandem Cylinders, Vol. 108, pp. 738-748, *Ocean Engineering*, DOI: 10.1016/j.oceaneng.2015.08.049.

7. Kamath A., Bihs H., Arntsen Ø.A. (2015), Numerical Investigations of the Hydrodynamics of an Oscillating Water Column, *Ocean Engineering*, Vol. 102, pp. 40-50, DOI: 10.1016/j.oceaneng.2015.04.043.

6. Alagan Chella M., Bihs H., Myrhaug D. (2015), Characteristics and Profile Asymmetry Properties of Waves Breaking Over an Impermeable Submerged Reef, *Coastal Engineering*, Vol. 100, pp. 26-36, DOI: 10.1016/j.coastaleng.2015.03.008

5. Afzal M.S., Bihs H., Kamath A.,Arntsen Ø.A. (2015), Three Dimensional Numerical Modeling of Pier Scour under Current and Waves using the Level Set Method, *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 137(3), pp. 032001-032007, DOI: 10.1115/1.4029999.

4. Kamath A., Bihs H., Arntsen Ø.A. (2015) Numerical Modeling of Power Take-off Damping in an Oscillating Water Column Device, *International Journal of Marine Energy*, Vol. 10, pp. 1-16, DOI: 10.1016/j.ijome.2015.01.001

3. Alagan Chella M., Bihs H., Myrhaug D., Muskulus M. (2015), Breaking characteristics and geometric properties of spilling breakers over slopes, *Coastal Engineering*, Vol. 95, pp. 4-19, DOI: 10.1016/j.coastaleng.2014.09.003.

2. Kamath A., Alagan Chella M., Bihs H., Arntsen Ø.A. (2015), CFD Investigations into Wave Forces and Flow around Three Cylinders placed in different configurations, *Engineering Applications of Computational Fluid Mechanics*, Vol. 9, No. 1, pp. 343-354, DOI: 10.1080/19942060.2015.1031318.

1. Bihs H., Olsen N.R.B. (2011), Numerical Modeling of Abutment Scour with the Focus on the Incipient Motion on Sloping Beds, *Journal of Hydraulic Engineering*, Vol. 137, No. 10, pp. 1287-1292, DOI: 10.1061/(ASCE)HY.1943-7900.0000401.

Conference Proceedings

149. Soydan A., Wang W., Bihs H. (2025), Ship Hydrodynamic Simulations in Realistic Sea States Using The Shock-Absorbing Non-Hydrostatic Solver REEF3D::NHFLOW, *NuTTS, 27th Numerical Towing Tank Symposium*, Zagreb, Croatia.

148. Knoblauch R., Wang W., Bihs H. (2025), Implementing a VOF-PLIC Method into a FDM-Solver Using the One-Fluid Approach, Crucial Methods to Assure Accuracy and Numerical Stability, *NuTTS, 27th Numerical Towing Tank Symposium*, Zagreb, Croatia.

147. Rakotonirina A.D., Sainte-Rose B., Bihs H. (2025), Vertical Distribution of Weakly Neutrally Buoyant Floating Macro- And Megaplastic Marine Litter Using Direct Forcing / Immersed Boundary Method and Large Eddy Simulation, *OMAE 2025, 44rd International Conference on Ocean, Offshore & Arctic Engineering*, Vancouver, Canada.

146. Soydan A., Wang G., Wang W., Bihs H. (2025), Numerical Investigation of Open-Ocean Aquaculture Structure Motions and Mooring Dynamics Using REEF3D::CFD, *OMAE 2025, 44rd International Conference on Ocean, Offshore & Arctic Engineering*, Vancouver, Canada.

145. Wang G., Jiao Z., Guan C., Soydan A., Wang W., Bihs H. (2025), Modelling Focused Breaking Wave Interactions with Pile-Net Aquaculture Structures (PNAS) Using REEF3D, *OMAE 2025, 44rd International Conference on Ocean, Offshore & Arctic Engineering*, Vancouver, Canada.

144. Pakozdi C., Knoblauch F., Soydan A., Wang W.W. , Bihs H., Alsos H., Nordheim K., Rolland L. (2025), Comparison of Numerical Methods for Extreme Wave Events in a 500-Year Sea State on a Monopile, *OMAE 2025, 44rd International Conference on Ocean, Offshore & Arctic Engineering*, Vancouver, Canada.

143. Wang W., Bihs H. (2025), AI-powered down-scale wave hydrodynamic analysis for coastal marine structures, *OMAE 2025, 44rd International Conference on Ocean, Offshore & Arctic Engineering*, Vancouver, Canada.

142. Bihs H., Soydan A., Knoblauch R., Wang W. (2025), A New Approach for Wave-Structure Interaction Modeling Using the Shock Absorbing Non-Hydrostatic Solver REEEF3D::NHFLOW, *OMAE 2025, 44rd International Conference on Ocean, Offshore & Arctic Engineering*, Vancouver, Canada.

141. Knoblauch R., Wang W., Bihs H. (2024), A VOF-PLIC Algorithm for Modelling the Impact of Breaking Waves on Structures, *NuTTS, 26th Numerical Towing Tank Symposium*, Duisburg, Germany.

140. Soydan A., Wang W., Bihs H. (2024), Ship Hydrodynamic Simulations Using an Upgraded Direct Forcing Immersed Boundary Method, *NuTTS, 26th Numerical Towing Tank Symposium*, Duisburg, Germany.

139. Bihs A., Ehlers R., Wang W. (2024), A Shock-absorbing non-hydrostatic Navier-Stokes solver on σ -grids for wave modeling over irregular topography, *OMAE 2024, 43rd International Conference on Ocean, Offshore & Arctic Engineering*, Singapore EXPO, Singapore.

138. Wang W., Pakozdi C., Christakos K., Bihs H. (2024), Down-scale wave hydrodynamic analysis for marine structures - the NORA-SARAH approach, *OMAE 2024, 43rd International Conference on Ocean, Offshore & Arctic Engineering*, Singapore EXPO, Singapore.

137. Soydan A., Wang W., Bihs H. (2024), An Upgraded Direct Forcing Immersed Boundary Method With Integrated Mooring Algorithm for Floating Offshore Wind Turbines, *OMAE 2024, 43rd International Conference on Ocean, Offshore & Arctic Engineering*, Singapore EXPO, Singapore.

136. Gomes T., Bihs H., Wang W., Vaz G. (2024), Simulating Waves in the Beaches of Ericeira World Surfing Reserve, *OMAE 2024, 43rd International Conference on Ocean, Offshore & Arctic Engineering*, Singapore EXPO, Singapore.

135. Cui T., He G., Wang W., Yuan L., Bihs H. (2024), Hydrodynamic Response of Semi-Submersible Platform of Floating Offshore Wind Turbine Under Extreme Breaking Waves, *OMAE 2024, 43rd International Conference on Ocean, Offshore & Arctic Engineering*, Singapore EXPO, Singapore.

134. Bihs A. Wang. W, Ehlers E., Gomes T., Vaz G. (2024), Modeling Wave Conditions at the Ericeira World Surf Reserve using the Non-Hydrostatic Navier-Stokes Solver REEF3D::NHFLOW,*ICCE 2024, International Conference on Coastal Engineering*, Rome, Italy.

133. Wang W., Christakos K., Bihs A.(2024), Efficient wave condition predictions for coastal structures based on machine learning and phase-resolving numerical simulations, *ICCE 2024, International Conference on Coastal Engineering*, Rome, Italy.

132. Hanke A., Wang W., Bihs A.(2024), Comparison between particle-based and semi-empirical Sediment Transport Simulations of Scour around a Vertical Cylinder, *ICCE 2024, International Conference on Coastal Engineering*, Rome, Italy.

131. Soydan R., Knoblauch F., Dempwolff L.C., Goseberg N., Wang W., Bihs A.(2024), Numerical modelling of primary ship waves in shallow coastal areas using CFD, *ICCE 2024, International Conference on Coastal Engineering*, Rome, Italy.

130. Ehlers R., Wang W., Bihs A.(2024), Sediment transport at the Baltic coast using a non-hydrostatic σ-grid model, *ICCE 2024, International Conference on Coastal Engineering*, Rome, Italy.

129. Knoblauch F., Soydan A., Wang W., Bihs A.(2024), Geometry Evaluating Piecewise Linear Interface Computation (GE-PLIC) Tailored to the Numerical Simulation of Breaking Waves, *ICCE 2024, International Conference on Coastal Engineering*, Rome, Italy.

128. Kelly D.M., Pender D., Bihs H., Wang W., Savant G. (2024), High Resolution CFD Modelling of Mangrove Wave Interaction Via Direct Forcing and Macroscopic Porosity Approaches, *10th International Symposium on Environmental Hydraulics*, Aberdeen, UK.

127. Dempwolff L.C., Melling G., Bihs A., Holwarth I., Goseberg N. (2024), Numerical modelling of propagation and deformation of long-period ship induced-waves using REEF3D::SFLOW , *8th IAHR Europe Congress*, Lisbon, Portugal.

126. Bihs H., Wang W., Ehlers R., Knoblauch, Soydan A. (2023), REEF3D::NHFLOW - An efficient non-hydrostatic numerical wave tank using σ-grids, *NuTTS, 25th Numerical Towing Tank Symposium*, Ericeira, Portugal.

125. Soydan A., Wang W., Bihs H. (2023), Numerical Applications of Wave-Structure Interaction Problems Using a Direct Forcing Immersed Boundary Method in REEF3D::CFD, *NuTTS, 25th Numerical Towing Tank Symposium*, Ericeira, Portugal.

124. Knoblauch R., Wang W., Bihs H. (2023), REEF3D::PTF - a fixed grid finite differences potential flow solver for three dimensional fluid structure interaction, *NuTTS, 25th Numerical Towing Tank Symposium*, Ericeira, Portugal.

123. Ehlers R., Wang W., Bihs H. (2023), 3D Numerical Free Surface Modeling of local erosion under current, *40th IAHR World Congress 2023*, Vienna, Austria.

122. Dempwolff L.-C., Windt C., Bihs H., Melling G., Goseberg N. (2023), Hydrodynamic coupling of a SWE solver with a RANSE-CFD code, *MARINE 2023, Computational Methods in Marine Engineering*, Madrid, Spain.

121. Knoblauch F., Soydan A., Wang W., Bihs H. (2023), The Fixed Grid Fully Non-linear Potential Flow Model REEF3D::PTF - Examination of Different Methods for Solving The Laplace Equation at the Free Surface, *MARINE 2023, Computational Methods in Marine Engineering*, Madrid, Spain.

120. Soydan A., Wang W., Bihs H. (2023), An Improved Direct Forcing Immersed Boundary Method for Simulating Floating Objects, *MARINE 2023, Computational Methods in Marine Engineering*, Madrid, Spain.

119. Berthelsen P.A., Kamath A., Martin T., Thys M., Bihs H. (2022), Numerical Simulation and Comparison with Experiments of a Floating Wind Turbine using a Direct Forcing Method, *RENEW 2022, 5th International Conference on Renewable Energies Offshore*, Lisbon, Portugal.

118. Wang W., Kamath A., Pakozdi C., Bihs H. (2022), High-efficiency wind-farm-scale wave force estimation for preliminary design of offshore wind installations, *RENEW 2022, 5th International Conference on Renewable Energies Offshore*, Lisbon, Portugal.

117. Soydan A., Wang W., Kamath A., Bihs H. (2022), A Direct Forcing Immersed Boundary Method For Simulating Floating Objects, *RENEW 2022, 5th International Conference on Renewable Energies Offshore*, Lisbon, Portugal.

116. Fleit G., Barandya S., Bihs H. (2022), CFD Modeling of Flow and Local Scouring in the Vicinity of Submerged Bridges, *39th IAHR World Congress*, Grenada, Spain.

115. Wang W., Mannikus R., Soomere T., Bihs H. (2022), Hydrodynamic evaluation of Naissaar Harbour with a phase-resolved coastal wave model, *7th IAHR Europe Congress*, Athens, Greece.

114. Ehlers R., Wang W., Kamath A., Bihs H. (2022), Comparison of Sea Wall Erosion Modelling with a 3D CFD model against a 2D Shallow Water Equations Model with a Non-Hydrostatic Pressure Assumption, *7th IAHR Europe Congress*, Athens, Greece.

113. Balouchi B., Mirzaahmadi A., Bihs H., Ruther N. (2022), 3D CFD modeling of bed changes at a laboratory channel confluence, *River Flow 2022, Eleventh International Conference on Fluvial Hydraulics*, Ottawa, Canada.

112. Wang W., Kamath A., Pakozdi C., Bihs H. (2022), A numerical investigation on wave spectrum identification and transformation from deep to shallow waters for the coastal and offshore installations, *OMAE 2022, 41st International Conference on Ocean, Offshore & Arctic Engineering*, Hamburg, Germany.

111. Kamath A., Wang W., Martin T., Pakozdi C., Bihs H. (2022), Identification and Investigation of Extreme Events using an Arbitrary Lagrangian Eulerian approach with a Laplace equation Solver and Coupling to a Navier-Stokes Solver, *OMAE 2022, 41st International Conference on Ocean, Offshore & Arctic Engineering*, Hamburg, Germany.

110. Dempwolff C.L., Windt C., Goseberg N., Martin T., Bihs H., Melling G. (2022), Computational Methods for Wave Structure Interaction Modelling in Coastal Environments Under Consideration of Bathymetric Attributes, *OMAE 2022, 41st International Conference on Ocean, Offshore & Arctic Engineering*, Hamburg, Germany.

109. Wang W., Pakozdi C., Kamath A., Martin T., Bihs H. (2021), Hydrodynamic Coupling of Viscous and Non-Viscous Numerical Wave Solutions Within the Open-Source Hydrodynamics Framework REEF3D, *OMAE 2021, 40th International Conference on Ocean, Offshore & Arctic Engineering*, Virtual Conference.

108. Windt C., Martin T., Bihs H., Goseberg N. (2021), Validation of a numerical model for the investigation of tension leg platforms with floating offshore wind application using REEF3D, *OMAE 2021, 40th International Conference on Ocean, Offshore & Arctic Engineering*, Virtual Conference.

107. Wang G., Martin T., Huang L., Bihs H. (2021), A Numerical Study of the Hydrodynamics of an Offshore Fish Farm Using REEF3D, *OMAE 2021, 40th International Conference on Ocean, Offshore & Arctic Engineering*, Virtual Conference.

106. Martin T., Bihs H. (2021), A CFD Approach for Modelling the Fluid-Structure Interaction of Offshore Aquaculture Cages and Waves, *OMAE 2021, 40th International Conference on Ocean, Offshore & Arctic Engineering*, Virtual Conference.

105. Cui T., Kamath A., Wang W., Yuan L., Bihs H. (2021), Focused Plunging Breaking Waves Impact on Cylinder Group in Deep Water, *OMAE 2021, 40th International Conference on Ocean, Offshore & Arctic Engineering*, Virtual Conference.

104. Pakozdi C., Kamath A., Wang W., Martin T., Bihs H. (2021), Efficient Calculation of Spatial and Temporal Evolution of Hydrodynamic Loads on Offshore Wind Substructures, *OMAE 2021, 40th International Conference on Ocean, Offshore & Arctic Engineering*, Virtual Conference.

103. Kim J., Fouques S., Croonenborghs E., Koop A., Lim H.-J., Zhao B., Canard M., Boucasse B., Wang W., Bihs H., Ducrozet G. (2021), Qualification Criteria for the Verification of Numerical Waves - Part 1: Potential-Based Numerical Wave Tank (PNWT), *OMAE 2021, 40th International Conference on Ocean, Offshore & Arctic Engineering*, Virtual Conference.

102. Martin T., Wang G., Bihs H. (2020), Numerical Modelling of the Interaction of Moving Fish Nets and Fluid, *OMAE 2020, 39th International Conference on Ocean, Offshore & Arctic Engineering*, Fort Lauderdale, USA.

101. Wang W., Pakozdi C., Kamath A., Bihs H. (2020), High-Fidelity Representation of Three-Hour Offshore Short-Crested Wave Field in the Fully Nonlinear Potential Flow Model REEF3D::FNPF, *OMAE 2020, 39th International Conference on Ocean, Offshore & Arctic Engineering*, Fort Lauderdale, USA.

100. Pakozdi C., Kamath A., Wang W., Bihs H. (2020), Representation of Breaking Wave Kinematics in the Fully Nonlinear Potential Flow Model REEF3D::FNPF, *OMAE 2020, 39th International Conference on Ocean, Offshore & Arctic Engineering*, Fort Lauderdale, USA.

99. Pakozdi C., Fouques S., Thys M., Kamath A., Wang W., Dadmarzi F.H., Bachynski E., Bihs H. (2020), Validation of Numerical Wave Tank Simulations Using REEF3D With JONSWAP Spectra in Intermediate Water Depth, *OMAE 2020, 39th International Conference on Ocean, Offshore & Arctic Engineering*, Fort Lauderdale, USA.

98. Bouscasse B., Kim J.W., Lim H., Ducrozet G., Choi Y.M., Bockman A., Pakozdi C., Cronenboorghs E., Bihs H., Koop A. (2020), Development of a Protocol to Couple Wave and CFD Solvers Towards Reproducible CFD Modeling Practices for Offshore Applications, *OMAE 2020, 39th International Conference on Ocean, Offshore & Arctic Engineering*, Fort Lauderdale, USA.

97. Wang G., Martin T., Huang L., Bihs H. (2020), Numerical Simulation of Hydrodynamics Around Net Meshes Using REEF3D, *OMAE 2020, 39th International Conference on Ocean, Offshore & Arctic Engineering*, Fort Lauderdale, USA.

96. Wang W., Pakozdi C., Kamath A., Bihs H. (2019), Large-scale Wave Modeling for Hydrodynamic Load Calculations on Floating Bridges in Norwegian Fjords, *Coastal Structures 2019*, Hannover, Germany.

95. Pakozdi C., Wang W., Kamath A., Bihs H. (2019), Validation of a High-Performance Computing Nonlinear Potential Theory Based Numerical Wave Tank for Wave Structure Interaction, *Coastal Structures 2019*, Hannover, Germany.

94. Pakozdi C., Wang W., Kamath A., Bihs H. (2019), Definition of irregular vertical meshing for wave propagation simulations on a sigma-grid using constant truncation error, *10th National Conference on Computational Mechanics, MekIT' 19*, Trondheim, Norway.

93. Kamath A., Bihs H. (2019), Modelling of stratified flow and mixing under current and wave forcing, *10th National Conference on Computational Mechanics, MekIT' 19*, Trondheim, Norway.

92. Wang W., Kamath A., Bihs H. (2019), High-performance phase-resolved wave modelling for irregular coastal topography, *10th National Conference on Computational Mechanics, MekIT' 19*, Trondheim, Norway.

91. Dempwolff L.C., Martin T., Kamath A., Bihs H. (2019), Numerical and experimental investigation of floating structures in regular waves, *The 8th International Conference on Computational Mechanics in Marine Engineering, MARINE 2019*, Göteborg, Sweden.

90. Martin T., Kamath A., Bihs H. (2019), Numerical modelling of the interaction between fish net and fluid using CFD, *The 8th International Conference on Computational Mechanics in Marine Engineering, MARINE 2019*, Göteborg, Sweden.

89. Bihs H., Wang W., Martin T., Kamath A. (2019), REEF3D::FNPF - A Flexible Fully Nonlinear Potential Flow Solver, *OMAE 2019, 38th International Conference on Ocean, Offshore & Arctic Engineering*, Glasgow, Scotland, UK.

88. Kamath A., Martin T., Bihs H. (2019), Numerical Modeling of Wave Interaction with an FPSO under Different Incident Wave Conditions, *OMAE 2019, 38th International Conference on Ocean, Offshore & Arctic Engineering*, Glasgow, Scotland, UK.

87. Aggarwal A., Martin T., Shirinov S., Kamath A., Bihs H. (2019), Numerical Study of Breaking Waves and Associated Wave Forces on a Jacket Substructure for Offshore Wind Turbines, *OMAE 2019, 38th International Conference on Ocean, Offshore & Arctic Engineering*, Glasgow, Scotland, UK.

86. Martin T., Kamath A., Bihs H. (2019), Numerical Modelling of Net Motion in Waves and Current Using CFD, *OMAE 2019, 38th International Conference on Ocean, Offshore & Arctic Engineering*, Glasgow, Scotland, UK.

85. Pakozdi C., Hermundstad E.M., Kamath A., Bihs H. (2019), REEF3D Wave Generation Interface for Commercial CFD Codes, *OMAE 2019, 38th International Conference on Ocean, Offshore & Arctic Engineering*, Glasgow, Scotland, UK.

84. Moideen R., Beherea M.R., Kamath A., Bihs H. (2019), Numerical Simulation and Analysis of Phase Focused Breaking and Non-Breaking Wave Impact on Fixed Offshore Platform Deck, *OMAE 2019, 38th International Conference on Ocean, Offshore & Arctic Engineering*, Glasgow, Scotland, UK.

83. Pakozdi C., Spence S., Fouqes S., Thys M., Alsos H.S., Bachynski E.E., Bihs H., Kamath A. (2018), Nonlinear wave load models for extra large monopiles, *IOWTC 2018, 1st International Offshore Wind Technical Conference*, San Francisco, USA.

82. Martin T., Kamath A., Bihs H. (2018), Numerical Simulation of Interactions between Water Waves and a Moored-Floating Breakwater, *ICCE 2018, International Conference on Coastal Engineering*, Baltimore, USA.

81. Bihs H., Kamath A., Aggarwal A., Pakozdi C. (2018), Efficient Wave Modeling Using Non-Hydrostatic Pressure Distribution and Free Surface Tracking on Fixed Grids, *OMAE 2018, 37th International Conference on Ocean, Offshore & Arctic Engineering*, Madrid, Spain.

80. Tomaselli D.T., Aggarwal A., Bihs H., Christensen E.D. (2018), Investigation on Breaking Focused Wave-Induced Loads on a Monopile with CFD Models, *OMAE 2018, 37th International Conference on Ocean, Offshore & Arctic Engineering*, Madrid, Spain.

79. Martin T., Kamath A., Bihs H. (2018), Modelling and Simulation of Moored-Floating Structures Using the Tension-Element-Method, *OMAE 2018, 37th International Conference on Ocean, Offshore & Arctic Engineering*, Madrid, Spain.

78. Wang W., Kamath A., Bihs H. (2018), CFD Simulations of Multi-Directional Irregular Wave Interaction with a Large Cylinder, *OMAE 2018, 37th International Conference on Ocean, Offshore & Arctic Engineering*, Madrid, Spain.

77. Kamath A., Pakozdi C., Alagan Chella M., Berthelsen P.A., Bihs H. (2018), Investigation of Higher-Harmonic Wave Forces and Ringing using CFD Simulations, *OMAE 2018, 37th International Conference on Ocean, Offshore & Arctic Engineering*, Madrid, Spain.

76. Sasikumar A., Kamath A., Musch O., Lothe A.E., Bihs H. (2018), Numerical Study on the Effect of a Submerged Breakwater Seaward of an Existing Breakwater for Climate Change Adaption, *OMAE 2018, 37th International Conference on Ocean, Offshore & Arctic Engineering*, Madrid, Spain.

75. Kamath A., Alagan Chella M., Bihs H. (2018), Breaking Focused Waves Generated Using the Transient Wave Packet Method and the Breaking Impact Forces on a Vertical Cylinder, *4th International Conference on Ocean Engineering*, Chennai, India.

74. Wang W., Bihs H., Kamath A. Arntsen Ø.A. (2018), Multi-directional Irregular Wave Modelling with CFD, *4th International Conference on Ocean Engineering*, Chennai, India.

73. Martin T., Bihs H., Kamath A. Arntsen Ø.A. (2018), Simulation of Floating Bodies in Waves and Mooring using REEF3D, *4th International Conference on Ocean Engineering*, Chennai, India.

72. Ahmad N., Kamath A., Bihs H., Arntsen Ø.A. (2018), Numerical Modelling of Scour around an Offshore Jacket Structure using REEF3D, *4th International Conference on Ocean Engineering*, Chennai, India.

71. Ashlin J., Sannasiraj S. A., Vallam S., Kamath A., Bihs H. (2018), Effects of Power Take-Off Damping and Model Scaling on the Hydrodynamic Performance of Oscillating Water Column Devices, *4th International Conference on Ocean Engineering*, Chennai, India.

70. Aggarwal A., Bihs H. (2018), CFD Study of Regular Waves on a Jacket Structure, *4th International Conference on Ocean Engineering*, Chennai, India.

69. Kamath A., Alagan Chella M., Bihs H., Arntsen Ø.A. (2017), Variation of Breaking Wave Forces on a Cylinder Based on Distance from the Breaking Location, *International Short Course and Conference on Applied Coastal Research*, Santander, Spain.

68. Bihs H., Kamath A., Alagan Chella M., Arntsen Ø.A. (2017), Extreme Wave Generation, Breaking and Impact Simulations with REEF3D, *OMAE 2017, 36th International Conference on Ocean, Offshore & Arctic Engineering*, Trondheim, Norway.

67. Alagan Chella M., Bihs H., Myrhaug D., Arntsen Ø.A. (2017), Computation of Wave Impact Pressures and Kinematics during Plunging Breaking Wave Interaction with a Vertical Cylinder using CFD Modelling, *OMAE 2017, 36th International Conference on Ocean, Offshore & Arctic Engineering*, Trondheim, Norway.

66. Sasikumar A., Bihs H., Kamath A., Musch O., Arntsen Ø.A. (2017), Numerical Investigation of Wave Kinematics inside Berm Breakwaters with Varying Bern Geometry using REEF3D, *OMAE 2017, 36th International Conference on Ocean, Offshore & Arctic Engineering*, Trondheim, Norway.

65. Aggarwal A., Alagan Chella M., Bihs H., Pakozdi C., Berthelsen P.A., Arntsen, Ø.A. (2017), Numerical Investigation of Irregular Breaking Waves for Extreme Wave Spectra using CFD, *The 27th International Offshore and Polar Engineering Conference, ISOPE 2017*, San Francisco, USA.

64. Ahmad N., Bihs H., Alagan Chella M., Arntsen Ø.A. (2017), Numerical Modelling of Arctic Coastal Erosion due to Breaking Waves Impact Using REEF3D, *The 27th International Offshore and Polar Engineering Conference, ISOPE 2017*, San Francisco, USA.

63. Bihs H., Kamath A., Alagan Chella M., Pakozdi C. (2017), Complex geometry handling for a Cartesian grid based CFD solver, *9th National Conference on Computational Mechanics, MekIT' 17*, Trondheim, Norway.

62. Fornes P., Bihs H., Nordal S. (2017), Implementation of non-Newtonian rheology for granular flow simulation, *9th National Conference on Computational Mechanics, MekIT' 17*, Trondheim, Norway.

61. Alagan Chella M., Bihs H., Arntsen Ø.A. (2017), A comparison of wave generation methods for simulating extreme waves in a numerical wave tank, *9th National Conference on Computational Mechanics, MekIT' 17*, Trondheim, Norway.

60. Aggarwal A., Alagan Chella M., Bihs H., Pakozdi C., Arntsen Ø.A. (2017), CFD modelling of irregular and focused waves using wave reconstruction, *9th National Conference on Computational Mechanics, MekIT' 17*, Trondheim, Norway.

59. Zheng Lu J., Kamath A., Bihs H. (2017), Simulation of freely-floating bodies in waves using a 6DOF algorithm, *9th National Conference on Computational Mechanics, MekIT' 17*, Trondheim, Norway.

58. Ahmad N., Bihs H., Kamath A., Arntsen Ø.A. (2017), A numerical investigation of erosion around offshore pipelines, *9th National Conference on Computational Mechanics, MekIT' 17*, Trondheim, Norway.

57. Wang W., Bihs H., Kamath A., Arntsen Ø.A. (2017), Large scale CFD modelling of wave propagation in Sulafjord for the E39 project, *9th National Conference on Computational Mechanics, MekIT' 17*, Trondheim, Norway.

56. Fornes P., Bihs H., Thakur V., Nordal S. (2017), Implementation of Non-Newtonian Rheology for Debris Flow Simulation with REEF3D, *37th IAHR World Congress*, Kuala Lumpur, Malaysia.

55. Bihs H., Kamath A., Lu J.Z., Arntsen, Ø.A. (2017), Simulation of Floating Bodies using a Combined Immersed Boundary with the Level Set Method, *The 7th International Conference on Computational Mechanics in Marine Engineering, MARINE 2017*, Nantes, France.

54. Alagan Chella M., Bihs H., Pakozdi C., Myrhaug D., Arntsen Ø.A. (2017), Simulation of Breaking Focused Waves over a Slope with a CFD based Numerical Wave Tank, *The 7th International Conference on Computational Mechanics in Marine Engineering, MARINE 2017*, Nantes, France.

53. Kamath A., Bihs H., Arntsen, Ø.A. (2017), Application of a 6DOF Algorithm for the Investigation of Impulse Waves Generated Due to Sub-Aerial Landslides, *The 7th International Conference on Computational Mechanics in Marine Engineering, MARINE 2017*, Nantes, France.

52. Wang W., Bihs H., Kamath A., Arntsen, Ø.A. (2017), Large Scale CFD Modeling of Wave Propagation into Mehamn Habor, *The 7th International Conference on Computational Mechanics in Marine Engineering, MARINE 2017*, Nantes, France.

51. Aggarwal A., Alagan Chella M., Bihs H., Pakzodi C., Arntsen, Ø.A. (2017), Numerical Study of Wave Transformation using the Free Surface Reconstruction Method, *The 7th International Conference on Computational Mechanics in Marine Engineering, MARINE 2017*, Nantes, France.

50. Kamath A., Alagan Chella M., Bihs H., Arntsen Ø.A. (2017), Influence of the Upstream Cylinder and Wave Breaking Point on the Breaking Wave Forces on the Downstream Cylinder, *12th International Conference on CFD in Oil & Gas, Metallurgical and Process Industries*, Trondheim, Norway.

49. Aggarwal A., Alagan Chella M., Kamath A., Bihs H., Arntsen Ø.A. (2017), Numerical study of irregular breaking wave forces on a monopile for offshore wind turbines, *14th Deep Sea Offshore Wind R&D Conference, EERA DeepWind'2017*, Trondheim, Norway.

48. Ahmad N., Bihs H., Kamath A., Arntsen Ø.A. (2016), 3D Numerical Modelling of Pile Scour with Free Surface profile under Wave and Current using Level Set Method in Model REEF3D, *8th International Conference on Local Scour and Erosion, ICSE 2016*, Oxford, UK.

47. Bihs H., Alagan Chella M., Kamath A., Arntsen Ø.A. (2016), Wave-Structure Interaction of Focused Waves with REEF3D, *OMAE 2016, 35th International Conference on Ocean, Offshore & Arctic Engineering*, Busan, South-Korea.

46. Grotle E.L., Bihs H., Pedersen E., Æsøy V. (2016), CFD Simulations of Non-Linear Sloshing in a Rotating Rectangular Tank Using the Level Set Method, *OMAE 2016, 35th International Conference on Ocean, Offshore & Arctic Engineering*, Busan, South-Korea.

45. Kamath A., Bihs H., Arntsen Ø.A. (2016), Study of Water Impact and Entry of Free Falling Wedge Using CFD Simulations, *OMAE 2016, 35th International Conference on Ocean, Offshore & Arctic Engineering*, Busan, South-Korea.

44. Alagan Chella M., Bihs H., Kamath A., Myrhaug D., Arntsen Ø.A. (2016), Numerical Modelling of Breaking Wave Interaction with a Group of Four Vertical Slender Cylinders in Square Arrangements, *OMAE 2016, 35th International Conference on Ocean, Offshore & Arctic Engineering*, Busan, South-Korea.

43. Aggarwal A., Alagan Chella M., Kamath A., Bihs H., Arntsen Ø.A. (2016), Numerical Simulation of Irregular Wave Forces on a Horizontal Cylinder, *OMAE 2016, 35th International Conference on Ocean, Offshore & Arctic Engineering*, Busan, South-Korea.

42. Alagan Chella M., Ros Collados, X., Bihs H., Myrhaug D., Arntsen Ø.A. (2016), Numerical and experimental investigation of breaking wave interaction with a vertical slender cylinder, *13th Deep Sea Offshore Wind R&D Conference, EERA DeepWind'2016*, Trondheim, Norway.

41. Aggarwal A., Alagan Chella M., Kamath A., Bihs H., Arntsen Ø.A. (2016), Irregular Wave Forces on a Large Vertical Circular Cylinder, *13th Deep Sea Offshore Wind R&D Conference, EERA DeepWind'2016*, Trondheim, Norway.

40. Kamath A., Bihs H., Alagan Chella M., Arntsen Ø.A. (2015), CFD Simulations to Determine Wave Forces on a Row of Cylinders, APAC 2015 Conference, Chennai, India, *Procedia Engineering*, DOI: 10.1016/j.proeng.2015.08.334.

39. Ahmad N., Bihs H., Kamath A., Arntsen Ø.A. (2015), Three-Dimensional CFD Modeling of Wave Scour around Side-by-Side and Triangular Arrangement of Piles with REEF3D, *Procedia Engineering*, APAC 2015 Conference, Chennai, India, DOI: 10.1016/j.proeng.2015.08.355.

38. Kamath A., Bihs H., Arntsen Ø.A. (2015), CFD Simulations for Fluid Structure Interaction due to Breaking Waves, *8th National Conference on Computational Mechanics, MekIT' 15*, Trondheim, Norway.

37. Ahmad N., Bihs H., Kamath A., Arntsen Ø.A. (2015), Numerical Simulation of Waves and Local Scour Around Vertical Cylinders in a Triangular Arrangement using REEF3D, *8th National Conference on Computational Mechanics, MekIT' 15*, Trondheim, Norway.

36. Aggarwal A., Kamath A., Bihs H., Arntsen Ø.A. (2015), Validation of Irregular Wave Generation in REEF3D, *8th National Conference on Computational Mechanics, MekIT' 15*, Trondheim, Norway.

35. Bihs H., Kamath A., Alagan Chella M., Arntsen Ø.A. (2015) CFD Simulations of Roll Motion of a Floating Ice Block in Waves Using REEF3D, *POAC 2015, International Conference on Port and Ocean Engineering under Arctic Conditions*, Trondheim, Norway.

34. Ahmad N., Bihs H., Kamath A., Arntsen Ø.A. (2015) CFD Modeling of Local Scour around a Pair of Tandem Cylinders under Wave Conditions, *POAC 2015, International Conference on Port and Ocean Engineering under Arctic Conditions*, Trondheim, Norway.

33. Ahmad N., Bihs H., Afzal M.S., Arntsen Ø.A. (2015) Three-Dimensional Numerical Modeling of Local Scour around a Non-Slender Cylinder under Varying Wave Conditions, *36th IAHR World Congress*, Delft, The Netherlands.

32. Alagan Chella M., Bihs H., Myrhaug D. (2015) An Investigation on Plunging Breaking Waves over a Slope with a CFD based Numerical Wave Tank, *36th IAHR World Congress*, Delft, The Netherlands.

31. Kamath A., Bihs H., Arntsen Ø.A. (2015) Three Dimensional CFD Modeling of flow around an OWC wave energy converter, *36th IAHR World Congress*, Delft, The Netherlands.

30. Kamath A., Bihs H., Alagan Chella M., Arntsen Ø.A. (2015), CFD Simulations of Wave Propagation and Shoaling over a Submerged Bar, *Aquatic Procedia*, DOI: 10.1016/j.aqpro.2015.02.042.

29. Kamath A., Bihs H., Arntsen Ø.A. (2014), A CFD based 3D Numerical Wave Tank to Investigate Wave Interaction with Rectangular Cylinders, *ICHE 2014, 11th International Conference on Hydroscience & Engineering*, Hamburg, Germany.

28. Alagan Chella M., Bihs H., Muskulus M. (2014), Numerical Simulation of Breaking Waves on a Plane Slope with a Parallel Level Set Solver, *ICHE 2014, 11th International Conference on Hydroscience & Engineering*, Hamburg, Germany.
27. Afzal M.S., Bihs H., Arntsen Ø.A. (2014), 3D Numerical Modeling of Contraction Scour under Steady Current using the Level Set Method, *ICHE 2014, 11th International Conference on Hydroscience & Engineering*, Hamburg, Germany.
26. Kamath A., Bihs H., Arntsen Ø.A. (2014), Comparison of 2D and 3D Simulations of an OWC Device in a Numerical Wave Tank, *ICCE 2014, International Conference on Coastal Engineering*, Seoul, Korea.
25. Bihs H., Kamath A., Arntsen Ø.A. (2014), CFD Multiphase Simulation of Two-Fluid Sloshing with Free Surface Motion using the Level Set Method, *10th International Conference on CFD in Oil & Gas, Metallurgical and Process Industries*, Trondheim, Norway.
24. Kamath A., Bihs H., Olsen J.E., Arntsen Ø.A. (2014), Effect of Compressibility in CFD Simulation of an Oscillating Water Column Devive, *10th International Conference on CFD in Oil & Gas, Metallurgical and Process Industries*, Trondheim, Norway.
23. Kamath A., Bihs H., Arntsen Ø.A. (2014), Analysis of Wave Interaction with Cylinders using a 3D Numerical Wave Tank, *OMAE 2014, 33rd International Conference on Ocean, Offshore & Arctic Engineering*, San Francisco, USA.
22. Afzal M.S., Bihs H., Kamath A.,Arntsen Ø.A. (2014), Three Dimensional Numerical Modeling of Pier Scour under Current and Waves using the Level Set Method, *OMAE 2014, 33rd International Conference on Ocean, Offshore & Arctic Engineering*, San Francisco, USA.
21. Bihs H., Afzal M.S., Kamath A., Arntsen Ø.A. (2013), REEF3D : An Advanced Wave Energy Design Tool for the Simulation of Wave Hydrodynamics and Sediment Transport, *International Workshop on Ocean Wave Energy*, Chennai, India.
20. Kamath A., Bihs H., Arntsen Ø.A. (2013), Investigating OWC Wave Energy Converters Using Two-Dimensional CFD Simulations, *International Workshop on Ocean Wave Energy*, Chennai, India.
19. Bihs H., Kamath A., Arntsen Ø.A. (2013), A 3D Numerical Wave Tank using the Level Set Method for the Calculation of Wave Propagation and Runup, *The Twenty-third International Offshore and Polar Engineering Conference, ISOPE 2013*, Anchorage, USA.
18. Kamath A., Bihs H., Arntsen Ø.A. (2013), Evaluation of Hydrodynamic Efficiency of an Oscillating Water Column Device through CFD Simulation, *The Twenty-third International Offshore and Polar Engineering Conference, ISOPE 2013*, Anchorage, USA.
17. Bihs H., Ong M.C. (2013), Numerical Simulation of Flows past Partially-Submerged Horizontal Circular Cylinders in Free Surface Waves, *OMAE 2013, 32rd International Conference on Ocean, Offshore & Arctic Engineering*, *OMAE 2013, 32rd International Conference on Ocean, Offshore & Arctic Engineering*, Nantes, France.
16. Alagan Chella M., Bihs H., Kamath A., Muskulus M. (2013), Numerical Modeling of Breaking Waves over a Reef with a Level-Set based Numerical Wave Tank, *OMAE 2013, 32rd International Conference on Ocean, Offshore & Arctic Engineering*, Nantes, France.
15. Kamath A., Bihs H., Arntsen Ø.A. (2013), Calculation of Wave Forces on Cylindrical Piles using a 3D Numerical Wave Tank, *OMAE 2013, 32rd International Conference on Ocean, Offshore & Arctic Engineering*, Nantes, France.

14. Bihs H., Ong M.C., Kamath A., Arntsen Ø.A. (2013), A Level Set Method based Numerical Wave Tank for the Calculation of Wave Forces on Horizontal and Vertical Cylinders, *7th National Conference on Computational Mechanics, MekIT' 13*, Trondheim, Norway.
13. Kamath A., Bihs H., Arntsen Ø.A. (2013), Application of Porous Media Flow Relation to Simulate Pressure Drop across a Nozzle in a Two Dimensional Numerical Wave Tank, *7th National Conference on Computational Mechanics, MekIT' 13*, Trondheim, Norway.
12. Bihs H. (2011), A Three Dimensional Multiphase Solver for the Calculation of Propagating Gravity Current Fronts, *7th International Symposium on Stratified Flows 2011*, Rome, Italy.
11. Bihs H. (2011), Three Dimensional Numerical Simulation of Bubble and Droplet Dynamics with a Parallel Particle Level Set Solver, *8th International Conference on CFD in Oil & Gas, Metallurgical and Process Industries*, Trondheim, Norway.
10. Andres-Domenech I., Moran F.J.V., Palau-Salvador G., Bihs H., Ortego A.F., Hernandez E.A., Corral J.M. (2011), Experimental and Numerical Modeling of Scour at Bridge Piers, *34th IAHR World Congress 2011*, Brisbane, Australia.
9. Bihs H. (2010), Numerical Investigations of Free Surface Flow in a Channel with a Long Contraction, *International Conference on Fluvial Hydraulics, River Flow 2010*, Braunschweig, Germany.
8. Bihs H., Olsen N.R.B., Stoesser T. (2010), Calculation of Secondary Flow in a Straight Open Channel with RANS and LES, *6th International Symposium on Environmental Hydraulics, ISEH VI 2010*, Athens, Greece.
7. Bihs H., Olsen N.R.B. (2010), Numerical Investigations of Local Scour around a Trapezoidal Abutment using the Finite Volume Method, *First European Congress of the IAHR 2010*, Edinburgh, UK.
6. Bihs H. (2009), Three Dimensional Numerical Modeling of Free Surface Flow around an Obstacle with the Level Set Method, *33rd IAHR World Congress 2009*, Vancouver, Canada.
5. Bihs H., Olsen N.R.B. (2009), Three Dimensional Numerical Modeling of Complex Free Surface Flow over a Backward Facing Step, *5th National Conference on Computational Mechanics, MekIT' 09*, Trondheim, Norway.
4. Bihs H., Olsen N.R.B. (2008), Three Dimensional Numerical Modeling of Pier Scour, *4th International Conference on Local Scour and Erosion, ISCE 2008*, Tokyo, Japan.
3. Bihs H., Olsen N.R.B. (2008), Three Dimensional Numerical Modeling of Secondary Flows in Channels with Longitudinal Bedforms, *4th International Conference on Fluvial Hydraulics, River Flow 2008*, Izmir, Turkey.
2. Bihs H., Olsen N.R.B. (2007), Three Dimensional Numerical Modeling of Abutment Scour, *5th International Symposium on Environmental Hydraulics, ISEH V 2007*, Tempe, USA.
1. Bihs H., Olsen N.R.B. (2007), Three Dimensional Numerical Modeling of Contraction Scour, *32nd IAHR World Congress 2007*, Venice, Italy.

In Popular Science

2. Bihs H., Kamath A., Alagan Chella M., Ahmad N., Aggarwal A., Arntsen Ø.A. (2015), Open-Source CFD in Marine Engineering, *META*, 2015 Vol. 1, pp 20-25.
1. Seehusen J. (Bihs H., Heilemann, K.), (2012), Utvikler bølgekraft for India, *Tekniske Ukeblad*, Vol. 159 (18), pp. 50-51.

Theses

3. Bihs H. (2011), Three-Dimensional Numerical Modeling of Local Scouring in Open Channel Flow, *Doctoral Thesis*, Department of Hydraulic and Environmental Engineering, No. 127, NTNU Trondheim, Norway.
2. Bihs H. (2006), Validation of Numerical Models Using 3D-Laser-Doppler Anemometry Data (in German), *Master Thesis*, Leichtweiß-Institute for Hydraulic Engineering and Water Resources, TU Braunschweig, Germany.
1. Bihs H. (2005), Three-Dimensional Numerical Flow Simulation of Bendway Weirs with SSIIM (in German), *Project Thesis*, Leichtweiß-Institute for Hydraulic Engineering and Water Resources, TU Braunschweig, Germany.

User's Guides

3. Bihs H. (2023), REEF3D User's Guide, `http://www.reef3d.com` , Trondheim, Norway.
2. Bihs H. (2023), DIVEMesh User's Guide, `http://www.reef3d.com` , Trondheim, Norway.
1. Bihs H. (2008), Gridmeister User's Guide, Department of Hydraulic and Environmental Engineering, Trondheim, Norway.

Invited Presentations and Seminars (selection)

24. Bihs H. (2021), A CFD-Based Numerical Framework for Modelling Open Ocean Aquaculture Structures, *Invited Speaker*, SIAM Conference on Mathematical & Computational Issues in the Geosciences.
23. Bihs H. (2020), Introduction to the Open-source hydrodynamic framework REEF3D, *JIP - REEF3D Webinar*, Joint-Industry-Project: Reproducible Computational Fluid Dynamics (CFD) Modeling Practices for Offshore Applications.
22. Bihs H. (2020), REEF3D::FNPF - Wave Modeling for the Norwegian Coast, *NCE Aquatech Cluster lunch webinar*, Norwegian Aquaculture Technology Cluster.
21. Bihs H. (2020), Wave Modeling, *Invited Virtual Guest Lecture*, Department of Hydromechanics, Coastal and Ocean Engineering, Leichtweiß-Institute for Hydraulic Engineering and Water Resources, Technical University Braunschweig, Germany.
20. Bihs H. (2020), REEF3D::FNPF Large Scale Phase-Resolved Wave Modeling from Deep Water to the Coast, *Invited Virtual Guest Lecture*, Department of Naval Architecture and Ocean Engineering, Harbin Engineering University, China.
19. Bihs H. (2019), *REEF3D : Open-Source Hydrodynamics - Efficient and Accurate Multiscale Wave Modeling*, Department of Civil Engineering, IIT Bombay, Mumbai, India.
18. Bihs H. (2019), REEF3D : Open Source Hydrodynamics, *SPARC Workshop on Physical and Numerical Modeling in Coastal and Ocean Engineering*, Department of Applied Mechanics and Hydraulics, NITK Surathkal, Mangalore, India.
17. Bihs H. (2019), REEF3D : Open-Source Hydrodynamics - Efficient and Accurate Multiscale Wave Modeling, *Future Paths and Needs in Wave Modeling, SINTEF Ocean Workshop - Invited Speaker*, Trondheim, Norway.

16. Bihs H. (2019), REEF3D::FNPF - Efficient Phase-Resolved Wave Modeling for the Norwegian Coast, *PIANC-NTNU Marin Byggteknikkdagen*, Department of Civil and Environmental Engineering, NTNU Trondheim, Norway.
15. Bihs H. (2019), Numerical Simulation of Wave Hydrodynamics with a Focus on Wave Structure Interaction *14. FZK-Kolloqium - Marine Resources and Renewable Energy - Invited Speaker*, Forschungszentrum Küste, Leibniz University Hannover, Germany.
14. Bihs H. (2018), REEF3D : Open-Source Hydrodynamics, *Hydraulic Engineering in Coastal Engineering, BAW*, Federal Waterways Engineering and Research Institute, Hamburg, Germany.
13. Bihs H. (2018), REEF3D : Open-Source Hydrodynamics, *1st International Workshop on Marine Hydrodynamic Modeling - Wave-Structure Interaction - Invited Speaker*, Department of Naval Architecture and Ocean Engineering, Harbin Engineering University, China.
12. Bihs H. (2018), REEF3D : Open-Source Hydrodynamics - Wave Modeling and Hydrodynamics, *Ocean Week 2018 - Oceans in Change*, Trondheim, Norway.
11. Bihs H. (2018), REEF3D : Open-Source Hydrodynamics - Modellierung von Wellen und Strömung, *Seminar at Leichtweiss-Institute for Hydraulic Engineering*, Technical University Braunschweig, Germany.
10. Bihs H. (2017), REEF3D : Open-Source Hydrodynamics, *Seminar at Franzius-Institute for Hydraulic, Estuarine and Coastal Engineering*, Leibniz University Hannover, Germany.
9. Bihs H. (2017), REEF3D : Open-Source Hydrodynamics, *Klima2050 Workshop*, Norwegian Geotechnical Institute (NGI), Oslo, Norway.
8. Bihs H. (2016), REEF3D : An Open-Source CFD Model for Coastal Engineering, *Invited Speaker, EU-Project Workshop Seditrans*, Instituto Superior Technico, Hydraulics and Water and Environmental Resources Section, Lisbon, Portugal.
7. Bihs H. (2016), REEF3D : An Open-Source CFD Model for Coastal Engineering, *PIANC-NTNU Marin Byggteknikkdagen*, Department of Civil and Transport Engineering, NTNU Trondheim, Norway.
6. Bihs H. (2015), REEF3D : CFD in Hydraulic and Coastal Engineering, *Civil Engineering Association Seminar*, Department of Civil Engineering, IIT Bombay, Mumbai, India.
5. Bihs H. (2015), REEF3D : Open Source CFD, *REEF3D Workshop*, Department of Applied Mechanics and Hydraulics, NITK Suratkhal, Mangalore, India.
4. Bihs H. (2015), REEF3D : A Numerical Model for Wave Structure Interaction Problems, *Invited Speaker, Special Session at the 8th International Conference on Asian and Pacific Coasts*, IIT Madras, Chennai, India.
3. Bihs H. (2014), PhD Forskning : Marin Byggteknikk, *NTNU-Kystverket Meeting*, Norwegian Coastal Administration, Kabelvag, Norway.
2. Bihs H. (2011), REEF3D : A New Numerical Model for the Calculation of Complex Free Surface Flows, *Seminar, Georgia Tech, School of Civil and Environmental Engineering*, Atlanta, USA.
1. Bihs H. (2008), Three-Dimensional Numerical Modeling of Local Scour, *Gesinus Meeting 2008, GErman-SINo Unsteady Sediment transport group*, BAW Karlsruhe, Germany.

Review Activities

Reviewer for the following journals:

- Ocean Engineering
- Applied Ocean Research
- Ocean Modelling
- Ocean Dynamics
- Marine Structures
- Aquaculture Engineering
- Coastal Engineering
- Journal of Waterways, Port, Coastal and Ocean Engineering
- Journal of Offshore Mechanics and Arctic Engineering
- Journal of Coastal Research
- Journal of Hydrodynamics
- Journal of Fluids and Structures
- Journal of Ocean Engineering and Marine Energy
- Marine Georesources & Geotechnology
- Energy
- Wind Energy
- International Journal of Naval Architecture and Ocean Engineering
- Journal of Marine Science and Engineering
- Journal of Marine Science and Technology
- Journal of Marine Science and Applications
- China Ocean Engineering
- Computers and Electronics in Agriculture
- Journal of Computational Physics
- Computers & Fluids
- International Journal of Numerical Methods in Fluids
- Applied Mathematics and Computation
- Applied Mathematical Modelling
- SoftwareX
- Journal of Hydraulic Research
- Journal of Hydraulic Engineering

- Water Resources Research
- Advances in Water Resources
- Water
- European Journal of Mechanics / B Fluids
- Fluid Dynamics Research
- Engineering Applications of Computational Fluid Mechanics
- Natural Hazards
- Physics and Chemistry of the Earth

Trondheim, 28. 8. 2025