

## CURRICULUM VITAE

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<b>Date of birth</b>	18 October 1968
<b>Nationality</b>	Danish
<b>Education</b>	Technical University of Denmark: PhD in Coastal Hydrodynamics (1993-1996) MSc in Structural and Civil Engineering (1988-1993)
<b>Key qualifications</b>	<b>Professor Christensen</b> is currently <b>coordinator</b> of the 7th frame programme project MERMAID, <a href="http://www.mermaidproject.eu/">http://www.mermaidproject.eu/</a> . Further, he has been involved in several research programs funded by Danish and European agencies, such as SASME, DELOS, FIELD_AC. Have more than 50 international publications in Journals and conference proceedings. The main subjects of the research and projects have been analyses of breaking waves, flow around offshore and coastal structures, sediment transport, shoreline development, analyses of moored ships in harbours and in the open sea, and wave loads on large structures such as offshore wind turbine foundations. He has been project manager and project supervisor for numerous consultancy projects at his time at DTU and DHI.

## EMPLOYMENT RECORD

Year	Firm	Position and responsibilities
2010-date	Technical University of Denmark Department of Mechanical Engineering, Section for Fluid Mechanics, Coastal and Maritime Eng. (FVM)	Professor in Hydraulic and Coastal Engineering
2007-2010	DHI	Head of Innovation for Marine Infrastructure and Energy.
2003-2006	DHI Water & Environment (DHI)	Hydrodynamics Specialist, Port and Offshore Department, (POT)
2000-2002	DHI Water & Environment (DHI)	Coastal Engineer, Coastal Engineering Department, (CED)
1999-2001	Technical University of Denmark, Institute of Hydrodynamics and Water Resources	Research Assistant. Supervisor for PhD-students in CFD, turbulence and sediment transport (part time).
1998-date	Technical University of Denmark	External Examiner for MSc-students and PhD-students (part time).
1996-2000	Danish Hydraulic Institute (DHI)	Coastal Engineer. Coastal Engineering Department,(CED)
1993-96	Technical University of Denmark, Institute of Hydrodynamics and Water Resources	PhD-student on coastal hydrodynamics and sediment transport.

Reviewer of manuscripts prepared for:

- Journal of Fluid Mechanics
- Coastal Engineering
- Ocean Engineering
- Applied Ocean Research
- Applied Mathematical Modelling

## EXPERIENCE RECORD, RESEARCH AND DEVELOPMENT PROJECTS

Year	Project	Position and activities
2013-2016	Management of Seabed Wind farm interaction PSO <sup>2</sup> (Through DHI)	DTU-MEK's coordinator. Principal supervisor for a PhD-student.
2012-2015	Innovative Multi-purpose off-shore platforms: planning, Design and Operation, MERMAID FP7, "Ocean of Tomorrow"	<b>Coordinator</b> of the EU-funded research project that involves 28 partners. The project focus on exploration of ocean resources for energy, food and transport related activities.
2010-2013	Marine structures of the future RTI <sup>1</sup> (Through DHI)	DTU-MEK's coordinator. Investigation of coastal structures interaction with waves, currents and seabed (breakwaters, offshore wind turbine foundations, and dredged channels for navigation and submerged tunnels). Principal supervisor for a PhD-student.
2010-2013	Wave loads of offshore wind turbines PSO <sup>2</sup> -funded research project	Project Manager at DHI (From 2011 member of steering committee). Development of numerical methods to study wave transformation, wave forces on offshore wind turbines foundation. Full integration of wave conditions from spectral wind wave models to advanced CFD models. Physical model experiments of loads on foundations and of entire wind turbine dynamics
2010-2014	Structural Design of Wave Energy Devices (SDWED) DSF <sup>3</sup> -funded research project	Project Manager at DHI. (From 2011 member of steering committee). Development of CFD-methods to model the wave energy converters interaction with waves. Inclusion of Power Take Off models (PTO). Analyses of the wave reflection, transmission and wave energy extraction. Effect on the wave condition to be analysed.
2008-2010	Fehmarnbelt Fixed Link, hydrographic services <a href="http://www.femern.com">http://www.femern.com</a>	Task Manager for substructure optimisation. Parameterisation of blockage and mixing of saline layers due to interaction between current and structure. The parameterisation is based on physical model tests, field measurements, and Computational Fluid Dynamics (CFD) analyses. Optimising the shape of substructures (i.e. structural parts below the water surface).
2008-2011	Seabed wind farm interaction DSF-funded research project <a href="http://sbwi.dhigroup.com">http://sbwi.dhigroup.com</a>	Project Manager at DHI and Co-supervisor for PhD-students. Development of effective methods to predict scour hole development over long time. Numerical study of erosion and back-filling processes. Interaction between foundations and sand waves and sand banks.

<sup>1</sup> RTI: Council for Technology and Innovation: <http://en.fi.dk/councils-commissions/the-danish-council-for-technology-and-innovation>

<sup>2</sup> Public Service Obligations: <https://www.forskel.dk/Pages/default.aspx>

<sup>3</sup> Danish Counsel for Strategic Research: <http://en.fi.dk/councils-commissions/the-danish-council-for-strategic-research>

		Test of scour protection procedures.
2008-2010	Aero-Hydro-Elastic Simulation Platform for Wave Energy Systems and Floating Wind Turbines PSO-funded research project	Project Manager/Project Supervisor. Combining Aero-elastic methods (HAWK2) with vessel motion methods (WAMSIM) to produce a simulation platform for a combined wind turbines and wave energy converter.
2007-2009	SAFE Offload EU-funded research project	Project Supervisor. Calculation of wave disturbance with MIKE 21 BW (Boussinesq wave model). The motions of the moored ships were found by DHI's in-house software, WAMSIM. Analyses of downtime. Implementation of "typical" mooring systems.
2006-2009	HAVDIM, Design of offshore wind turbines PSO-funded research project	Project Manager. Development of numerical methods to study wave transformation, wave forces on offshore wind turbines foundations. Study of combined effect of wind and wave loads. Including experiences from first offshore wind farms in methodologies for design
2005-2010	Offshore wind farms – Research related bottlenecks STVF-funded research project	Project Manager. Research project. Study effects of wind farms to the incoming wave field, the generation of waves and the effect on density currents and on the morphology and coastlines.
1999-2005	Computational Hydrodynamics STVF-funded research project	Project Manager. Research project. Development of numerical methods to study wave transformation, wave forces, vortex-induced vibrations of pipelines and scour processes around offshore and coastal structures. Investigations of spilling and plunging breakers.
2003-2004	WAMSIM Integration Internal R&D-project	Project Manager/Project Engineer. Development and technology transfer to DHI of the WAMSIM software tool for studying non-linear motion and mooring systems of floating bodies. The WAMSIM-code is integrated into DHI's MIKE Zero environment.
2002	DELOS. Environmental <u>design</u> of <u>low</u> crested coastal defence <u>structures</u> . EU-funded research project	Project Engineer. Study of wave breaking and flow structures over and around low-crested structures in the surf zone.
1999	NS3 model for offshore platforms. Internal R&D-project	Research Engineer. Development of a CFD-model to calculate wave forces on cylinders above the mean sea level.
1997-98	ICCH. International Center for Computational Hydrodynamics	Research Engineer. Development of free surface methods for breaking waves in two and three dimensions.
1999	SASME. <u>S</u> urf and <u>S</u> wash Zone <u>M</u> echanics. EU-funded research project	Research Engineer. Development of free surface CFD-methods for breaking waves in two and three dimensions. Investigation of the turbulence generation and level in breaking waves on a slope.

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1997-98	LITPACK. Software Package for Littoral Processes and Coastline Kinetics Internal R&D-project	Project Engineer. Updating and further development of the LITLINE module of LITPACK.
1996-97	CENAS: Study on the coastline evolution of the eastern Po plain due to sea level change caused by climate variation and to natural and anthropic subsidence. EU-funded research project	Project Engineer/Project Manager. Evaluation of retreat/accretion of the coastline including the subsidence rates in LITPACK.
1996-97	Research Project on Submerged Breakwaters. Internal R&D-project	Project Engineer. Evaluation of the performance of submerged breakwaters by use of DHI 2D morphological modelling complex M21MORF.

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## EXPERIENCE RECORD, COMMERCIAL TECHNICAL PROJECTS

2008-2009	Wave loads on offshore wind turbine foundations, Thornton Bank, Belgium	Project Manager. Calculation of wave loads using DHI's CFD tool, NS3. Optimisation of force coefficients for a Morison force model. Calculation of distribution wave load over the depth for irregular breaking waves. Supervision of MIKE21 BW (Boussinesq wave model) calculation of design waves over Thornton Bank.
2008	Wave loads on offshore wind turbine foundations, Rødsand 2, Denmark	Project Manager. Calculation of wave loads using DHI's CFD tool, NS3. Estimation of wave load from beneath the seabed.
2008	Forecast system for current, waves and scour at Robin Rigg, UK	Project Manager. Analyses of scour processes for installation of offshore wind turbine foundations. Implementation of a forecast system to predict waves, currents, and scour conditions.
2007	Mooring study - New port of Tangiers Med, Morocco	Project Supervisor. Calculation of wave disturbance with MIKE 21 BW (Boussinesq wave model). The motions of the moored ships were found by DHI's in-house software, WAMSIM. Analyses of downtime. Implementation of "typical" mooring systems.
2007	Balickera Pumping Station, Australia	Project Supervisor. Study of near field flow in a water intake. The flow was analysed using DHI's CFD-tool NS3.
2007	Numerical analyses of ship motion in Zadar Port, Croatia	Project Manager. Calculation of wave disturbance in an open harbour in Croatia with MIKE 21 BW (Boussinesq wave model). The motions of the moored ships were found by DHI's in-house software, WAMSIM.
2006	Baglihar Reservoir, Sedimentation Study, India	Project Engineer. Study of near field flow in Baglihar reservoir. The flow, sediment transport and initial scour patterns were studied using DHI's CFD-tool NS3.
2005	Old Sirte Fishing Harbour, Libya	Project Engineer. Establishment of the overall sediment transport budget. Simulation of the two-dimensional (2D) wave, current and sediment transport fields by MIKE 21 – HD, PMS, ST for an existing layout and a new layout of the harbour.
2005	Numerical Analyses of a Labyrinth Weir, Ecuador	Project Manager. Assessment of scope of work, numerical analysis with DHI's in-house CFD tool, NS3, of a labyrinth weir related to a design of a hydropower dam in Ecuador. Study of scour and scour protection.
2005	Wave run-up on Wind-turbine foundations, Horns Rev	Project Manager. Assessment of scope of work and investigation of wave run-up on wind turbine foundations using DHI's CFD tool, NS3.

2004	Intake/Discharge Structures, Shin-Wolsong 1&2, Korea	Project Engineer. Analyses of the hydraulic performance of intake structures with DHI's in-house CFD tool, NS3. Assessment of sediment intrusion.
2004	Tumut 3 Power Station, NS3 Surge Modelling, Australia	Project Manager. Due to uprating of the Tumut 3 Power Station in Snowy Mountains, Australia, surge during acceptance and rejection was investigated. The surge was simulated with DHI's in-house CFD software, NS3. The set-up validated with full-scale experiments from the site.
2004	Caravelas Channel Dredging	Project Engineer. Investigation of the hydraulic performance of Caravelas navigation channel. The flow results were used as basis for navigation analyses. Further the sedimentation in the channel was studied. The flow and sediment transport was modelled with the MIKE 21 package.
2003	Jumeirah CZMP-IAP Modelling Study, Dubai	Project Engineer. Study of sediment transport and shoreline evolution with LITPACK.
2003	Forces and Overtopping of Caisson Breakwater	Project Manager. Preliminary study of wave forces and green water overtopping on a concrete caisson installed at 17m of water depth. Horizontal forces on columns on top of the breakwater were found using horizontal strip theory. The forces on the caisson breakwater and overtopping were simulated with DHI's CFD tool, NS3.
2002	Crossing dam, Thule airbase, Greenland	Project Manager. Set-up of the refined flow model, NS3, to calculate flow over and through a crossing dam.
2001	Sediment transport and sand waves in deep water, Fjaltring	Project Manager. Study of the sediment transport pattern over sand waves in deep water (25m to 10m). Evaluation of the sediment budget over the area of interest using the MIKE 21 NSW, HD and STQ3.
2000-01	EIA (Environmental Impact Assessment) for beach nourishment	Project engineer. Morphological aspects of the effects of shoreface and beach nourishment on the environment at the West Coast of Jutland.

2000	Sediment transport, West Coast of Jutland	Project Manager/Project engineer. Evaluation of the sediment transport along the entire west coast of Jutland. Calibration of LITPACK at 13 cross-sections and finally setting up an operational system to calculate the transport for any measured time series of the wave conditions.
1998	Broadwater Resort, Biloxi, Mississippi	Project Engineer. Numerical modelling of the nearshore wave climate (MIKE 21 NSW). Establishment of the sediment transport budget. Simulation of the 2D wave, current and sediment transport fields by MIKE 21 (HD, PMS, ST) for a number of alternative designs.
1997	Shore approach design, West Coast of Jutland, Denmark	Project Manager/Project Engineer. Evaluation of the sediment transport at the shore approach site for the South Arne pipeline. Evaluation of profile and trench development.
1997-98	Jumeirah Coastal Zone Management Plan, Dubai	Project Engineer. Evaluation of the coastal sediment balance. LITPACK baseline study, analysis and evaluation of different coastal protection schemes.
1997	Malaysia ISM, Pulau Kerengga	Project Engineer. Hydraulic and sedimentological studies. Analysis of coastline evolution and sediment transport by LITPACK.
1996-97	Ravenna Beach Study, Italy	Project Engineer. Evaluation of a coastal protection scheme for Punta Marina and Casal Borsetti, Italy, by LITPACK.

In connection to all the technical projects reports has been submitted to the client. More than 40 detailed technical reports have elaborated, but these are not open to public.



## PHD-PROJECTS:

Principal supervisor for:

- Hao Chen: Analyses of wave current interaction with flexible offshore structures. In progress (2013-2016)
- Pietro Danilo Tomaselli: Detailed analyses of breaking wave dynamics interaction with nearshore and offshore structures. In progress (2012-2015)
- Bjarne Jensen: Wave interaction with porous coastal structures. (2010-2014), Finalized

Formal co-supervisor for:

- Sina Saremi: Density-driven currents and deposition of fine materials. (2011-2014). In progress 2011-2014. Principal supervisor: Jacob Hjelmager Jensen
- Thor Ugelvig Petersen: Stability of Stone Covers. In progress, (2010-2013). Principal supervisor: B.M. Sumer
- Anders Wedel Nielsen: Scour protection of offshore wind farms (2008-2011). Principal supervisor: B.M. Sumer
- Iris P. Buxbom: Large Eddy Simulation of Ventilated Wave Boundary Layer. 2003. Principal Supervisor: B.M. Sumer
- Kjartan Gislason: Numerical Modelling of Flow and Scour of Coastal Structures. 2003. Principal Supervisor: J. Fredsøe

Doctor Opponent and Committees:

- Chairman for the Adjudication Committee for Sten Esbjørn Kristensen, Marine and Coastal Morphology: medium term and long-term area modelling, A full Hydro- and morphodynamic description of breaker bar development.(2013) Ph.D. thesis, Department of Mechanical Engineering, Technical University of Denmark.
- Chairman for the Adjudication Committee for Sten Esbjørn Kristensen, Marine and Coastal Morphology: medium term and long-term area modelling, A full Hydro- and morphodynamic description of breaker bar development.(2013) Ph.D. thesis, Department of Mechanical Engineering, Technical University of Denmark.
- Chairman for the Adjudication Committee for Niels Gjørl Jacobsen, A full Hydro- and morphodynamic description of breaker bar development.(2011) Ph.D. thesis, Department of Mechanical Engineering, Technical University of Denmark.
- In Adjudication Committee for Kristian Bendix Nielsen , Numerical prediction of green water loads on ships. Ph.D. thesis, Department of Mechanical Engineering, Technical University of Denmark.

## MSC-PROJECTS:

Supervisor for master thesis projects:

- Thomas Stig Jensen, Tobias Højmark Madsen, "Interaction of breaking waves with offshore structures", (Autumn 2013)(Finish)
- Kristian Moland Kromann, Huzaimah Anwar Khattak, "Analyses of vessel and boat landing interface on a mono-pile foundation", (Autumn 2013)(Finish)
- Adam Andersen Læssøe, "Analyses of wave run-up on a mono-pile", (Autumn 2013)(Finish)
- Peter Hesselbjerg, Mikael Thyge Madsen, "Pore pressure under a GBS and interaction with seabed under the influence of waves"(Autumn 2013)(Finish)
- Zahra Waisi: "Hydraulic performance of a floating breakwater", In progress (Spring 2013)
- Jeppe Buhrkall and Mark Christian Degn Eskesen "CFD analyses of velocity caps", (Autumn 2012) (Finish)
- Christel Jeanty Nielsen "CFD analyses of hydrodynamic loads on gravity based foundations", Finish (Spring 2012)
- Morten Reinholdt Ibsen "CFD analyses of hydraulic performance of rubble mound breakwaters", Finish (Spring 2012)
- Martin Vistisen. Hydraulic performance of a rubble mound breakwater. Finish (Autumn 2011)
- Francis Andreas Lee Kjærsgaard. Wave induced pore-pressures under gravity based wind turbine foundations. Finish (Spring 2011)

## EXAMPLES OF PUBLICATIONS

### Peer reviewed contributions to international journals

- Jensen, B., Christensen, E.D., Mutlu Sumer, B., 2014. Pressure-induced forces and shear stresses on rubble mound breakwater armour layers in regular waves. *Coastal Engineering*, 91, 60–75. DOI:10.1016/j.coastaleng.2014.05.003
- Jensen, B., Jacobsen, N. G., & Christensen, E. D. (2014): "Investigations on the porous media equations and resistance coefficients for coastal structures". *Coastal Engineering*, 84, 56–72. doi:10.1016/j.coastaleng.2013.11.004
- Christensen, ED., Johnson, M, Sørensen, OR, Hasager, CB, Badger, M, and Larsen, SE (2013): "Transmission of wave energy through an offshore wind turbine farm". *Coastal Engineering*, Vol. 80C, 25-46.
- Emarat, N, Forehand, DI.M., Christensen, ED, Greated, CA. "Experimental and numerical investigation of the internal kinetics of a surf-zone plunging breaker", *European Journal of Mechanics B - Fluids* (ISSN: 0997-7546) , vol: 32, pages: 1-16, 2012
- Nielsen, AW, Sumer, B. M., Fredsøe, J, Christensen, ED." Sinking of armour layer around a cylinder exposed to a current" in journal: *Institution of Civil Engineers. Proceedings Maritime Engineering* (ISSN: 1741-7597), vol: 164, issue: 4, pages: 159-172, 2011
- Christensen, ED (2006): "Large eddy simulation of spilling and plunging breakers", *Coastal Engineering*, Volume 53, Issues 5-6, April 2006, Pages 463-485
- Lohmann, I. P., Fredsøe, J., Sumer, B. M., and Christensen, E. D. (2006):"Large Eddy Simulation of the ventilated wave boundary layer", *J. of Geophysical Research*, Vol. 111, 21 pages.
- Losada, IJ, Lara, JL, Christensen, ED, and Garcia, N (2005):" Velocity field and turbulence modelling around and within low-crested rubble-mound breakwaters". *Coastal Engineering* 2005, Vol. 52, No 10-11, pp 887-913.
- Christensen, ED, Walstra, D-J and Emerat, N (2004): "Reply to discussion of vertical variation of the flow across the surf zone". *Coastal Engineering*, Vol. 50, Issue 3, January 2004, pp 165-166.
- Christensen, ED, Walstra, D-J and Emerat, N (2002): "Vertical variation of the flow across the surf zone", *Coastal Engineering*, Vol. 45, pp 169-198.
- Christensen, ED, and R Deigaard (2001): "Large eddy simulation of breaking waves", *Coastal Engineering*, Vol. 42 No 1, pp 53-86.

### Peer reviewed contributions to international conferences:

#### ICCE (Int. Conference on Coastal Engineering)

- Dixen, M., Lohmann, I.P., and ED Christensen (2012):"Method to Predict Long Time Span of Scour Around Offshore Wind Turbine Foundations". In Proc. 33<sup>rd</sup> Int. Conference on Coastal Engineering, ASCE, Santander, Spain 2012,(ICCE), 14 pages: <http://journals.tdl.org/icce/index.php/icce/issue/view/361>
- Jensen, B., Christensen, ED, and Sumer, B. Mutlu (2012): "Wave interaction with large roughness elements on an impermeable sloping bed ". In Proc. 33<sup>rd</sup> Int. Conference on Coastal Engineering, ASCE, Santander, Spain 2012,(ICCE), 14 pages: <http://journals.tdl.org/icce/index.php/icce/issue/view/361>
- Knudsen, SB, Laustrup, C, Toxvig Madsen, H, and ED Christensen (2002): "Sediment transport in the outer part of the coastal profile". In Proc. 28<sup>th</sup> Int. Conference on Coastal Engineering, ASCE, Cardiff, Wales, UK, 12 pages
- Christensen, ED, Jensen, JH, and S Mayer (2000): "Sediment transport under breaking waves", In Proc. of the 27<sup>th</sup> Int. Conf. Coastal Eng., ASCE, Sydney, Australia, 16-21, Vol. 3, pp 2467-2480.
- Emarat, N, Christensen, ED, Forehand, DIM, and Mayer, S (2000): "A study of plunging breaker mechanics by PIV measurements and a Navier-Stokes solver", In Proc. of the 27<sup>th</sup> Int. Conf. Coastal Eng., ASCE, Vol 1, pp 891-901, Sydney, Australia
- Christensen, ED, Deigaard, R, and Fredsøe, J (1994): "Sea bed instability on a long straight coast". Proc. 24<sup>th</sup> Int. Coastal Engineering Conf., ASCE, Kobe, Japan, pp 1865-1879.

Deigaard, R, Damgaard Christensen, E, Svarrer Damgaard, J and Fredsøe, J (1994): "Numerical simulation of finite shear waves and sediment transport". Proc. 24<sup>th</sup> Int. Coastal Engineering Conf., ASCE, Kobe, Japan, pp 1919-1933.

## OMAE (Conference on Ocean, Offshore and Arctic Engineering)

Jorge Ramirez, J, Frigaard P., Andersen, TL, Christensen ED (2012): "Breaking wave on a slender cylinder: Comparison of experimental data and numerical results", Proceedings of 22<sup>st</sup> International Offshore and Polar Engineering Conference (OMAE2012) 10 pages

Ramirez, J, Frigaard, P, Andersen TL ; Christensen, ED: Numerical Modelling of Wave Run-Up (2011): Regular Waves part of: Proceedings of 21<sup>st</sup> International Offshore and Polar Engineering Conference (ISBN: 978-1-880653-96-8), pages: 342-346, 2011, International Society of Offshore and Polar Engineers,

Christensen, ED, Lohmann IP, Hansen, HF, Haerens, P, Mercelis, P., and Demuyneck, A (2011). "Irregular wave loads on a gravity based foundation in shallow water ". In Proceedings of the ASME 30<sup>th</sup> International Conference on Offshore Mechanics and Arctic Engineering (p. 10 Pages). Rotterdam, The Netherlands: ASME.

Christensen, ED, Bredmose, H., & Hansen, E. A. (2009). "Transfer of Boussinesq waves to a Navier-Stokes solver. Application to wave loads on an offshore wind turbine foundation". In Proceedings of the ASME 28<sup>th</sup> International Conference on Offshore Mechanics and Arctic Engineering (p. 10 Pages). Honolulu, Hawaii: ASME.

Hansen, HF, Carstensen, S, Christensen, ED, and Kirkegaard, J. (2009): "Multi Vessel interaction in shallow water". In Proceedings of the ASME 2009 28<sup>th</sup> International Conference on Ocean, Offshore and Arctic Engineering OMAE2009 (p.8 Pages). Honolulu, Hawaii: ASME.

Christensen, ED, Jensen, B., Mortensen, S. B., Hansen, H. F., & Kirkegaard, J. (2008): "Numerical simulation of ship motion in offshore and harbour areas". Proceedings of the ASME 27<sup>th</sup> International Conference on Offshore Mechanics and Arctic Engineering OMAE 2008, June 15-20, 2008 (p. 10 pages). Estoril, Portugal: ASME.

Nielsen, A.W., Jacobsen, V., Mortensen, S.B., Christensen, E.D. 2008. Numerical modelling of wave run-up on a wind turbine foundation. Proceedings of the ASME 27<sup>th</sup> International Conference on Offshore and Arctic Engineering OMAE 2008, June 15-20, 2008, (p. 8 pages). Estoril, Portugal: ASME.

Bredmose, H, Skourup, J, Hansen, E.A., Christensen, E.D., Pedersen, LM, Mitzlaff A.(2006): "Numerical reproduction of extreme wave loads on a gravity wind turbine foundation", Proceedings of OMAE 2006 25<sup>th</sup> International Conference on Offshore Mechanics and Arctic Engineering, June 4-9, 2006, Hamburg, Germany

## Other conference contributions

Christensen, ED, Eskesen, MCD, Buhrkall, J, and Jensen, B (2014): "Analyses of hydraulic performance of velocity caps", 3rd IAHR Europe Congress, Book of Proceedings, 2014, Porto –Portugal

Christensen, ED, Svenstrup Petersen, O, Aarup Ahrensberg, N, Møhlenberg, F & Zanuttigh, B (2014): "Aquaculture as a part of a multi-use platform", in Proceedings of the 5th Offshore Mariculture Conference.

Innovative multi-purpose offshore platforms : Planning, design and operation. / Claus, Simon; Seys, Jan; Pirlet, Hans; Mees, Jan; Christensen, Erik Damgaard; Zanuttigh, Barbara. 2013. Abstract from LITTORAL 2012, Oostende, Belgium.

Petersen, TU, Sumer, BM, Meyer, KE, Fredsøe, F., and Christensen ED (2012): "Edge scour in current adjacent to stone covers", Conference paper to be presented at ICSE-6., 6th International Conference on Scour and Erosion, Paris - August 27-31, 2012.

Nielsen, A.W., Sumer, B.M., Fredsøe, J. and Christensen, ED. (2010):" Scour Protection around Offshore Wind Turbines in Current. Mono-piles", Conference paper to be presented at ICSE-5., 5th International Conference on Scour and Erosion, 2010, to be held in San Francisco, USA, 7<sup>th</sup>-10<sup>th</sup> of November

Tarp-Johansen, N.J., Andersen, L., Christensen, E.D., Kallesøe, B., Frandsen, S. (2009): "Comparing sources of damping of cross-wind motion". European Offshore Wind, Stockholm, Sweden, 14-16 September, 2009

- Gravesen, H., Christensen, E.D., Pedersen, J., Schoenberg, T., Helkjær, A. (2009): "Wave forces on offshore wind turbines with varying cross section and exposed to asymmetrical and breaking waves". European Offshore Wind, Stockholm, Sweden, 14-16 September, 2009.
- Christensen, ED., Yde, L., Gavesen, H., Hansen, E.A., Tarp-Johansen, N.J., Damsgaard, M.L. 2007. Wave load on offshore wind turbine foundations in shallow water. Engineering models vs. refined flow modelling. Proceedings of the European Offshore Wind Conference 2007. (EOW 2007) Berlin, Germany
- Larsen, T., Nielsen, L., Jensen, B., Christensen, E.D. 2007. Some Experiences with Numerical Modelling of Overflows. 5<sup>th</sup> International Symposium on Environmental Hydraulics (ISHE 2007), December, Arizona, USA
- Hansen, EA, and Christensen, ED (2007): "Scour holes or scour protection around offshore wind turbine foundations: Effect on Loads", In Proc of European Wind Energy Conference EWEC 2007, Milan, Italy, pp 139-142.
- Frigaard, P, Hansen, EA, Christensen, ED, and Jensen, MS (2005): "Effect of breaking waves on scour processes around circular offshore wind-turbine foundations", In Proc. of Copenhagen Offshore Wind Conference, 10 pages.
- Christensen, ED, Bredmose, H, and Hansen. EA (2005): "Extreme wave forces and wave run-up on offshore wind-turbine foundations", In Proc. of Copenhagen Offshore Wind Conference, 10 pages
- Christensen, ED, and Hansen. EA (2005): "Extreme wave run-up on offshore wind-turbine foundations", In Proc. of Int. Conf. on Computational Methods in Marine Engineering (MARINE 2005), Oslo, Norway, 27-29 June 2005, pp 293-302.
- Christensen, ED, Zanuttigh, B and Zyserman, J (2003): "Validation of numerical models against laboratory measurements of waves and currents around low-crested structures". In Coastal Structures 03, 26-29 August 2003, Portland, Oregon. (13 pages)
- Buxbom, IP, Fredsøe, J, Sumer, BM, Conley, DC and Christensen, ED (2003): "Large eddy simulation of turbulent wave boundary layer subject to constant ventilation". In Coastal Sediments 03, 18-23 May 2003. Sheraton Sand Key Resort, Clearwater Beach, Florida.
- Kerper, Dale R, Brøker, I, Christensen, ED and Zyserman, J (2002): "Application of coastal modelling systems in support of integrated coastal zone management". In Proc. Solutions to Coastal Disasters Conference, San Diego, California, USA.
- Christensen, ED, Skou, A, Brøker, I, Rugbjerg, M, and P Sørensen (2001): "Sediment transport along the west coast of Jutland", In Proc. of the conference Coastal Zone 01, CZ01, 15-19 July, Cleveland, Ohio. Proc. on CD-rom.
- Zyserman, J, Jørgensen, K and ED Christensen: "Sediment transport and morphology in the vicinity of shore-parallel breakwaters", in Coastal Structures '99, Santander, Spain, 7-10 June 1999.
- Other publications:*
- Christensen, ED, and Nielsen, AW (2008): "Wave Impact on Offshore Wind Turbines and Foundations", Offshore Center Danmark ON/OFF NEWS - JUNE 08.  
<http://www.offshorecenter.dk/ONOFF.asp>
- Christensen, ED, and Hansen, EA, (2006): "Wave Forces, Wave Run-up, and detailed Flow on and around Wind Turbine Foundations, determined by NS3", Offshore Center Danmark Yearbook 2006.  
<http://www.offshorecenter.dk/ONOFF.asp>
- Frigaard, P, De Vos, L, Christensen, ED, and Hansen, EA (2006): "Influence of breaking waves on scour processes around circular offshore wind turbine foundations", Int. public seminar on Offshore wind turbines situated in areas with strong currents, 9<sup>th</sup> February 2006, Aalborg University Esbjerg, Denmark, pp 108-127.
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