

Seabed Wind Farm Interaction (2008-2012)

Sagsnummer: 2104-07-0010

List of Publications

Book:

2013:

- Sumer, B.M.: Liquefaction Around Marine Structures, World Scientific, November 2013.

Journal publications:

2008:

- Dixen, F. H., Sumer, B.M. and Fredsøe, J. (2008): "Suction removal of sediment from between armour blocks. II. Waves". Journal of Hydraulic Engineering, ASCE, vol. 134, No. 10, pp. 1405-1420, 2008.

2009:

- Gislason, K., Fredsøe, J. Deigaard R. and Sumer B.M. (2009): "Flow under standing waves. Part 1. Shear stress distribution, energy flux and steady streaming". Coastal Engineering. vol. 56, pp. 341-362, 2009.
- Gislason, K. Fredsøe, J. and Sumer B.M. (2009): "Flow under standing waves. Part 2. Scour and deposition in front of breakwaters". Coastal Engineering. vol. 56, pp. 363-370.

2010:

- Sumer, B.M., Dixen, F. H. and Fredsøe, J.: "Cover stones on liquefiable soil bed under waves". Coastal Engineering, vol. 57, pp. 864-873, 2010.
- Peres Akrawi Hartvig, Jess McCann Thomsen, Peter Frigaard and Thomas Lykke Andersen (2010): Experimental study of the development of scour and backfilling. Coastal Eng. Journal, 52(2): 157-194. ISSN 0578-5634.
- Andersen, S. and Andersen, Lars (2010): Modelling landslides with the material-point method., Computational Geosciences 137-147

2011:

- Dey, S., Helkjaer, A., Sumer, B.M. and Fredsøe, J. (2011): "Scour at vertical piles in sand-clay mixtures under waves". J. Waterway, Port, Coastal and Ocean Engineering, ASCE, vol. 137, , No. 6, pp. 324-331.
- Fuhrman, D.R., Sumer, B.M. and Fredsøe, J. (2011): "Roughness-induced streaming in turbulent wave boundary layers". J. Geophys. Res., 116, C10002, doi:10.1029/2011JC007155.
- Nielsen, A.W., Sumer, B.M., Fredsøe and Christensen, E.D. (2011): "Sinking of armour layer around a cylinder exposed to a current". Maritime Engineering, Institution of Civil Engineers (ICE), vol. 164, issue 4, pp. 159-172, 2011.

- Niemann, S.L., J. Fredsøe and N.G. Jacobsen (2011): "Sand Dunes in Steady Flow at Low Froude Numbers: Dune Height Evolution and Flow Resistance". Journal of Hydraulic Engineering, ASCE, vol. 137, No. 1, pp 5-14.
- Sumer, B.M., Dixen, F. H. and Fredsøe, J. (2011 a): "Stability of submerged berms exposed to motion of liquefied soil in waves". Ocean Engineering. Vol. 38, 849-859, 2011.
- Andersen, Thomas Lykke; Frigaard, Peter; Damsgaard, M. L.; De Vos, L. (2011): Wave Run-up on Slender Piles in Design Conditions : model tests and design rules for offshore wind. Coastal Engineering, Vol. 58, Nr. 4, 2011, s. 281-289.
- Peres Akrawi Hartvig (2011): The reverse approach for monopole scour. Coastal Eng. Journal. Under review.
- Peres Akrawi Hartvig (2011): Model for the evolving bed surface around an offshore monopole. Coastal Eng. Journal. Under review.

2012:

- Nielsen, A.W., Sumer, B.M. and Fredsøe, J. (2012 a): "Experiments on removal of sediment from between armour blocks. Part 3: Breaking waves. J. Hydraulic Engineering, ASCE, in print.
- Nielsen, A.W., Sumer, B.M., Ebbe, S.S. and Fredsøe, J. (2012 b): "Experimental study on the scour around a mono pile in breaking waves". J. Waterway, Port, Coastal and Ocean Engineering, ASCE, in print.
- Sumer, B.M., Kirca, V.S.O. and Fredsøe, J. (2012 a): "Experimental validation of a mathematical model for seabed liquefaction under waves". International Journal of Offshore and Polar Engineering, vol. 22, No. 2, 133-141.
- Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo; Foglia, Aligi (2012): "Testing of Laterally Loaded Rigid Piles with Applied Overburden Pressure". Journal of Geotechnical and Geoenvironmental Engineering.

2013:

- Sumer, B.M., Petersen, T.U., Locatelli, L., Fredsøe, J., Musumeci, R.E. and Foti, E. (2013): "Backfilling of a scour hole around a pile in waves and current". J. Waterway, Port, Coastal and Ocean Engineering, ASCE, Vol. 139, No. 1, 9-23.
- Nielsen, A.W., Liu, X., Sumer, B.M. and Fredsøe, J. (2013): "Flow and bed shear stresses in scour protections around a pile in a current". Coastal Engineering, 20-38.
- Dixen, M., Sumer, B.M. and Fredsøe, J. (2013): "Numerical and experimental investigation of flow and scour around a half-buried sphere", Coastal Engineering, vol. 73, 84-105.
- Sumer, B.M. and Nielsen, A. (2013): "Sinking failure of scour protection at wind turbine foundation". Energy, Institution of Civil Engineers (ICE). In print.

Conference publications:

2008:

- Sumer, B.M.: "Coastal and offshore scour/erosion issues- Recent Advances" (2008). Proceedings of the Fourth International Conference on Scour and Erosion, November 5-7, 2008, Tokyo, Japan, pp. 85-94.
- Sumer, B.M. and Fredsøe, J. (2008): "Behaviour of stone protection on / in liquefied seabed", COPEDEC VII, 2008, Dubai, UAE, Paper No: S-24.

2009:

- Sørensen, Søren Peder Hyldal; Brodbæk, K. T.; Møller, M.; Augustesen, Anders Hust; Ibsen, Lars Bo (2009): Evaluation of the Load-Displacement Relationships for Large-Diameter Piles in Sand. Proceedings of the Twelfth International Conference on Civil, Structural and Environmental Engineering

Computing. red. / B. H. V. Topping; L. F. Costa Neves; R. C. Barros. Civil-Comp Press, 2009. (Civil-Comp Proceedings; Nr. 91).

- Augustesen, Anders Hust; Brødbæk, K. T.; Møller, M.; Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo; Pedersen, Thomas Schmidt; Andersen, Lars (2009): Numerical Modelling of Large-Diameter Steel Piles at Horns Rev. Proceedings of the Twelfth International Conference on Civil, Structural and Environmental Engineering Computing. red. / B. H. V. Topping; L. F. Costa Neves; R. C. Barros. Civil-Comp Press, 2009. (Civil-Comp Proceedings; Nr. 91).

2010:

- Nielsen, A.W., Sumer, B.M., Fredsøe, J. and Christensen, E.D. (2010): "Scour protection around offshore wind turbines. Monopiles". Proceedings of the Fifth International Conference on Scour and Erosion, November 7-10, 2010, San Francisco, USA, pp. 440-449.
- Stevanato, F., Nielsen, A.W., Sumer, B.M. and Fredsøe, J. (2010): "Flow velocities and bed shear stresses in a stone cover under an oscillatory flow". Proceedings of the Fifth International Conference on Scour and Erosion, November 7-10, 2010, San Francisco, USA, pp. 609-618.
- Augustesen, Anders Hust; Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo; Andersen, Lars; Møller, Martin; Brødbæk, Kristian T. (2010): Comparison of Calculation Approaches for Monopiles for Offshore Wind Turbines. Numerical Methods in Geotechnical Engineering: proceedings of the seventh european conference on numerical methods in geotechnical engineering, Trondheim, Norway, 2-4 june 2010. red. / Thomas Benz; Steinar Nordal. London : C R C Press LLC, 2010. s. 901-906.
- Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo; Augustesen, Anders Hust (2010): Effects of Diameter on Initial Stiffness of P-Y Curves for Large-Diameter Piles in Sand. / Numerical Methods in Geotechnical Engineering: proceedings of the seventh european conference on numerical methods in geotechnical engineering, Trondheim, Norway, 2-4 june 2010. red. Thomas Benz; Steinar Nordal. London : C R C Press LLC, 2010. s. 907-912.
- Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo; Frigaard, Peter (2010): Experimental Evaluation of Backfill in Scour Holes around Offshore Monopiles. Frontiers in Offshore Geotechnics II: proceedings of the 2nd international symposium on frontiers in offshore geotechnics, Perth, australia, 8-10 november 2010. red. / Susan Gouvenec; David White. Leiden, The Netherlands : Balkema Publishers, A.A. / Taylor & Francis The Netherlands, 2010. s. 617-622.
- Frigaard, Peter; Andersen, Thomas Lykke; Ramirez, Jorge Robert Rodriguez; Sørensen, Søren Peder Hyldal; Martinelli, Luca; Lamberti, Alberto; Troch, Peter; de Vos, Leen; Kisacik, Dogan; Stratigaki, Vasiliki; Zou, Qingping; Monk, Kieran; Vandamme, Johan; Damsgaard, Mathilde Lindhart; Graversen, Helge (2010): Loads on Entrance Platforms for Offshore Wind Turbines. / Proceedings of the HYDRALAB III JOINT TRANSNATIONAL ACCESS USER MEETING: Hannover, February 2010. red. / Joachim Grüne; Mark Klein Breteler. Hannover : Forschungszentrum Küste FZK (Coastal Research Center FZK), 2010. s. 25-28.

2011:

- Sumer, B.M., Kirca, V.S.O. and Fredsøe, J. (2011 b): "Experimental validation of a mathematical model for seabed liquefaction in waves". Proceedings of the 21st International Offshore and Polar Engineering Conference, Maui, Hawai, USA, June 19-24, 2011, pp. 1010-1018.
- Roesen, Hanne Ravn; Thomassen, Kristina; Ibsen, Lars Bo; Sørensen, Søren Peder Hyldal (2011): Evaluation of Small-Scale Laterally Loaded Monopiles in Sand. Symposium Proceedings: 64th Canadian Geotechnical Conference and 14th Pan-American Conference on Soil Mechanics and Engineering, 5th Pan-American Conference on Teaching and Learning of Geotechnical Engineering. Toronto, Ontario: Pan-AM CGS Geotechnical Conference, 2011.
- Brødbæk, K. T.; Augustesen, Anders Hust; Møller, M.; Sørensen, Søren Peder Hyldal (2011): Physical Modelling of Large Diameter Piles in Coarse-Grained Soil. / Geotechnical Engineering: New Horizons: Proceedings of the 21st European Young Geotechnical Engineers' Conference Rotterdam 2011. red. / F. B. J. Barends; J. Bredeveld; R. B. J. Brinkgreve; M. Korff; L. A. van Paassen. Vol. 0 2011. udg. Delft: IOS Press, 2011. s. 69-74.

- Thomassen, Kristina; Roesen, Hanne Ravn; Ibsen, Lars Bo; Sørensen, Søren Peder Hyldal (2011): Small-Scale Testing of Laterally Loaded Monopiles in Sand. Symposium Proceedings: 64th Canadian Geotechnical Conference and 14th Pan-American Conference on Soil Mechanics and Engineering, 5th Pan-American Conference on Teaching and Learning of Geotechnical Engineering. Toronto, Ontario : Pan-AM CGS Geotechnical Conference, 2011.
- Ramirez, Jorge Robert Rodriguez; Frigaard, Peter; Andersen, Thomas Lykke; Christensen, Erik Damgaard (2011): Numerical Modelling of Wave Run-Up : regular waves. International Offshore and Polar Engineering Conference. Proceedings, 2011, s. 342-346.

2012:

- Kirca, V.S.O., Fredsøe, J. and Sumer, B.M. (2012 a): "Wave liquefaction in soils with clay content". 8th Int. Conf. on Coastal and Port Engineering in Developing Countries, COPEDEC 2012, IIT Madras, Chennai, India, 20-24 Feb., 2012, 395-402.
- Kirca, V.S.O., Sumer, B.M. and Fredsøe, J. (2012 b): "Residual liquefaction under standing waves". Proc. of the Twenty-second (2012) Int. Offshore and Polar Engineering Conf., Rhodes, Greece, June 17-22, 2012, 1392-1398.
- Petersen, T.U., Sumer, B.M., Meyer, K.E., Fredsøe, J. and Christensen, E.D. (2012): "Edge scour in current adjacent to stone covers". The 6th International Conference on Scour and Erosion, Paris, August 27-31, 2012, 739-746.
- Petersen, T.U., Sumer, B.M. and Fredsøe, J. (2012): "Time scale of scour around a pile in combined waves and current". The 6th International Conference on Scour and Erosion, Paris, August 27-31, 2012, 981-988.
- Dixen, M., Lohmann, I. P. and Christensen, E.D. (2012): "Method to predict long time span of scour around offshore wind turbine foundations". Proceedings of 33th International Conference on Coastal Engineering, Santander, Spain, July 1-6, 2012.
- Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo (2012): Experimental Comparison of Non-Slender Piles under Static Loading and under Cyclic Loading in Sand. The Proceedings of the Twenty-second (2012) International Offshore and Polar Engineering Conference. ISOPE, 2012. s. 732-738 (International Offshore and Polar Engineering Conference. Proceedings; Nr. 22).
- Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo; Frigaard, Peter (2012): Relative Density of Backfilled Soil Material around Monopiles for Offshore Wind Turbines. / The Proceedings of the Twenty-second (2012) International Offshore and Polar Engineering Conference. ISOPE, 2012. s. 177-183 (International Offshore and Polar Engineering Conference. Proceedings; Nr. 22).
- Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo (2012): Small-Scale Testing of Laterally Loaded Non-Slender Piles in a Pressure Tank. NGM 2012 Proceedings: Proceedings of the 16th Nordic Geotechnical Meeting. Vol. 1 Dansk Geoteknisk Forening, 2012. s. 443-450.
- Ramirez, Jorge Robert Rodriguez; Frigaard, Peter; Christensen, Erik Damgaard; Andersen, Thomas Lykke (2012): Breaking Wave on a Slender Cylinder : comparison of experimental data and numerical results. Proceedings of the ASME 2012 31st International Conference on Ocean, Offshore and Arctic Engineering: OMAE2012. Rio de Janeiro : American Society of Mechanical Engineers, 2012.

Poster presentations:

2010:

- Sørensen, Søren Peder Hyldal; Frigaard, Peter; Ibsen, Lars Bo (2010): Experimental Evaluation of Backfill Around Monopiles. / Poster session presented at Dansk Selskab for vindenergis konference , Vingsted , Danmark.

Reports:

2009:

- S. Andersen (2009): Material-Point Analysis of Large Strain Problems – Modelling of Landslides. Ph.D-thesis, Department of Civil Engineering, Aalborg University.

2011:

- Peres Akrawi Hartvig (2011): Scour Forecasting – For Offshore Wind Parks. PhD thesis. ISSN 1901-7294. DCE Thesis No 30. Department of Civil Engineering, Aalborg University.
- Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo. Aalborg (2011): Small-Scale Cyclic Tests on Non-slender Piles Situated in Sand : test results. / Aalborg University. Department of Civil Engineering, 2011. 80 s. (DCE Technical Reports; Nr. 118).
- Sørensen, Søren Peder Hyldal; Ibsen, Lars Bo (2011): Small-Scale Quasi-Static Tests on Non-Slender Piles Situated in Sand. Aalborg University. Department of Civil Engineering, 2011. 206 s. (DCE Technical Reports; Nr. 112).

2012:

- Ottesen Hansen, N.-E., 2012. Frequency Dependence of Soils Elasticity and Soils Damping in Offshore Foundations on confined Sand Layer. LICEngineering Report 0737-01, Rev.0, 04.04.2012. Made as part of the research project: "Seabed Windfarm Interaction."
- DHI (2012). Natural seabed changes and interaction with seabed forms. Hørsholm, In preparation, October 2012.
- Sørensen, Søren Peder Hyldal; Brødbæk, Kristian Thoustrup; Møller, Martin; Augustesen, Anders Hust (2012): Review of Laterally Loaded Monopiles Employed as the Foundation for Offshore Wind Turbines. Aalborg University. Department of Civil Engineering, 2012. 54 s. (DCE Technical Reports; Nr. 137).
- Sørensen, Søren Peder Hyldal (2012): Soil-Structure Interaction for Non-Slender, Large-Diameter Offshore Monopiles. Aalborg University. Department of Civil Engineering.
- Ramirez, Jorge Robert Rodriguez (2012): Wave Run-Up on Offshore Wind Turbines : numerical and experimental results. Aalborg : Aalborg University. Department of Civil Engineering, 2012. 100 s. (DCE Ph.D Thesis; Nr. 39).