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Erin E. Bachynski-Polić

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PERSONAL INFORMATION

Date of Birth: January 24, 1987
Place of Birth: Pontiac, MI, USA
Citizenship: USA
Gender: Female

EDUCATION

Aug. 2010 – Mar. 2014	**Norwegian University of Science and Technology, Trondheim, Norway** **Centre for Ships and Ocean Structures** **PhD Marine Technology (Adviser Prof. Torgeir Moan)** **Thesis: Design and Dynamic Analysis of Tension Leg Platform Wind Turbines**
Sept. 2009 – May 2010	**University of Michigan, Ann Arbor, MI** **G.P.A. 8.703/9.000** **M.S. Naval Architecture and Marine Engineering** **Thesis: Power Takeoff and Safety Considerations for a Tethered Point-Absorber Wave Energy Converter (Adviser Prof. Yin Lu (Julie) Young)**
Sept. 2005 – May 2009	**University of Michigan, Ann Arbor, MI** **G.P.A. 3.995/4.000** **B.S.E. Naval Architecture and Marine Engineering** **Minor in Mathematics**

EMPLOYMENT HISTORY

Feb. 2020 - present	**NTNU (Norwegian University of Science and Technology)** Professor in the Department of Marine Technology. Research on numerical and experimental modelling of offshore wind turbine structures, including hydroelasticity, nonlinear wave loads, and structural response modelling.
April 2016 – Jan. 2020	**NTNU (Norwegian University of Science and Technology)** Associate professor in the Department of Marine Technology, supported by Onsager Fellowship in Marine Structures for the Future.
Feb. 2014 – Mar. 2016	**MARINTEK (Norwegian Marine Technology Research Institute)** Researcher, Offshore Hydrodynamics (Marine Operations and Ocean Energy group). Developing and validating numerical tools and models for hydrodynamic and aerodynamic loads and structural responses. (100% from Feb. 2014-Aug. 2014, 80% from Sept. 2014-Mar. 2016).
Sept. 2014 – Mar. 2016	**NTNU (Norwegian University of Science and Technology)** Adjunct associate professor (20%) within marine technology (marine structures with emphasis on renewable energy).

June – Sept. 2009 **Maritime Research Institute Netherlands, Wageningen, the Netherlands**
Engineering Intern, "Validation of the aNySIM Morison Module"
Tested implementation of Morison's Equation in a time-domain simulation code, including debugging, validation against model tests, and validation against similar software

May 2007 – May 2009 **University of Michigan Marine Hydrodynamics Laboratory**
Research assistant under Dr. Michael Bernitsas, "Design and Testing of the VIVACE (Vortex Induced Vibrations Aquatic Clean Energy) Converter"
Designed, built, and tested modifications to unique laboratory apparatus
Evaluated prototype design options for power take-off, location, array spacing

RESEARCH ACTIVITIES AND FIELDS OF INTEREST

- Global dynamic analysis of fixed and floating offshore wind turbines
- Ringing loads and responses of bottom-fixed structures in intermediate water depth
- Experimental and numerical modelling of floating offshore wind turbines
- Software development for dynamic analysis of marine structures
- Multidisciplinary design optimization of marine structures

Present doctoral students:

- Xiaoming Ran (expected graduation 2024): High-fidelity hydrodynamic load and response modelling for floating wind turbines
- Serageldin Abdelmoteleb (expected graduation 2024): Design of Large Floating Substructures for Supporting Future Generation Offshore Wind Turbines
- Peter Rohrer (expected graduation 2025): Multidisciplinary design optimization of floating wind turbines.
- Veronica Liverud Krathe (expected graduation 2025) Multifidelity modelling of floating wind turbines
- Vishnu Ramachandran Nair Rajasree (expected graduation 2025): Dynamics of lattices of marine structures
- Benjamin Leduc (expected graduation 2026): Design and dynamic analysis of multi-modular structures
- Synne Hoggen Nybø (co-supervisor, expected graduation 2026): Design of floating wind parks with shared mooring

Graduated doctoral students:

- Emil Smilden. Co-supervisor. Graduated 11.2019. Structural control of offshore wind turbines: Increasing the role of control design in offshore wind farm development. Main supervisor: Asgeir Sørensen.
- Loup Suja. Co-supervisor. Graduated 10.2019. Responses of monopile wind turbines to higher order wave loads. Main supervisor: Jørgen Krokstad.
- John Marius Hegseth. Graduated 30.11.2020. Multidisciplinary design optimization of floating wind turbines.
- Haoran Li. Graduated 27.08.2021. Nonlinear wave loads, and resulting global response statistics of a semi-submersible wind turbine with heave plates.
- Carlos Eduardo Silva de Souza. Graduated 08.09.2022. Dynamic analysis of floating wind turbines, considering control and hull flexibility

- Stian Høegh Sørum. Co-supervisor. Graduated 29.09.2023. Uncertainties in fatigue estimation for large monopile wind turbines
- George Katsikogiannis. Graduated 02.02.2024. Wave loads and soil support for extra large monopile wind turbines.
- Irene Rivera Arreba. Graduated 09.08.2024. Wind load modelling for floating wind turbines, with focus on the mooring system responses.

Research/education grants:

- NFR 268182 WAS-XL (2017-2021), Wave loads and soil support for extra-large monopiles (KPN, WP leader)
- MARINET2 (EU Grant 731084, 2017-2021) – Access Grant 1088 (Follow-on Testing of the OC5 Semisubmersible to Address Hydrodynamic Modelling Uncertainties)
- NFR 274827 Green energy at sea (2018-2022): offshore wind turbines and energy systems for ships, ports, and offshore structures (INTPART, Deputy project manager)
- WEAMEC grant (2019-2021, France): HeloFOW. Hydroelastic analysis of floating wind turbines using weak-scatterer approach
- NFR 294573 WINDMOOR (2019-2023), Advanced wave and wind load models for floating wind turbine mooring system design (KPN, WP leader)
- EU project 860879 (2019-2023) FLOAWER (ITN, WP leader) FLOAting Wind Energy network
- NFR 309281 SFI BLUES (2020-2028) Floating Structures for the Next Generation Ocean Industries (WP Leader)
- NFR 308839 (2020-2024) Upscale – Building knowledge on the future generation of floating substructures for very large wind turbines (WP Leader)
- NFR 326654 (2021-2025) CYBERLAB – Cyber-physical empirical methods for lattices of marine structures (WP Leader)
- NFR 336968 (2023-2025) WindBarge – Low cost floating wind energy production (WP Leader)
- NFR 353053 (2025-2028), BIRDWAKE – Offshore wind farm wake effects on seabird flight (WP Leader)
- NFR 352810 (2025-2028), Optiflex – Coupled vibrations of large optimized floating wind turbines (WP Leader)

PROFESSIONAL QUALIFICATIONS

Computer Skills:

Proficient: MATLAB, Python, Fortran 77/90, Abaqus, SIMO (SINTEF Ocean, involved in development), RIFLEX (SINTEF Ocean, involved in development), Simo-Riflex-AeroDyn with Java control (involved in development), Microsoft Office, LaTeX, FAST, AutoCAD 2009
Limited experience: Java, HAWC2, Dynamic C, Solidworks, NCL, ArcGIS

Languages:

English (native)
French (fluent)
Norwegian (fluent)
Spanish (conversational, written)
Croatian (beginner)

AWARDS

2024	Lecturer of the year – Department of Marine Technology, NTNU
2023	OMAE 2022 Offshore Renewable Energy Best Paper Award (co-author)
2023	Deepwind2023: Best Poster award (co-author)
2021	Lecturer of the year – Department of Marine Technology, NTNU
2016	NOWITECH Innovation Award
2015	Onsager Fellowship (Marine Structures for the Future)
2015	OMAE Conference Appreciation Award
2014	Chorafas prize (best PhD thesis at NTNU)
2012	Forsker (Researcher) Grand Prix Trondheim - participant
2010	National Science Foundation Graduate Research Fellowship (awarded, declined)
2010	National Defense Science and Engineering Graduate (NDSEG) Fellowship (awarded, declined)
2010	Hertz Foundation Fellowship Finalist
2009 – 2010	William M. Kennedy Graduate Scholarship (SNAME)
2009 – 2010	College of Engineering Dean's Named Fellowship
2009	Distinguished Achievement Award (NA&ME)
2006 – 2009	James Angell Scholar
2008	Henry Ford II Prize: Outstanding Junior, College of Engineering
2007 – 2008, 2008 – 2009	American Bureau of Shipping/NA&ME Scholarship
2008	Graham Scholars Program: Sustainable Energy Development in South America
2007 – 2009	National Oceanic and Atmospheric Administration Hollings Scholarship
May – Aug. 2007	Marian Sarah Parker Award and Summer Undergraduate Research Award
2006, 2007	William H. Mack Memorial Engineering Prize
2006	George M. Landes Contest for Technical Communication, 3rd Place, Freshman Division
May – Aug. 2006	UROP Engineering and Physical Sciences Summer Fellowship
2005 – 2009	College of Engineering Richard Earhart Scholarship
2005	Regents Merit Scholarship

COMMISIONS OF TRUST

Editorial board member: Applied Ocean Research, Wind Energy Science, Journal of OMAE.

PhD thesis assessment committees:

- Pierre-Yves Wuillaume: École Centrale de Nantes, 2019. Numerical simulation of installation operations for offshore wind farms
- Vincent Arnal: École Centrale de Nantes, 2020. Experimental modelling of a floating wind turbine using a "software-in-the-loop" approach
- Pim van der Male: Technische Universiteit Delft, 2021. A method for the preliminary design of offshore wind support structures.
- Simon Mewes: Universität Duisburg-Essen, 2021. Numerical Prediction of Hydrodynamic Damping and Loads on a Floating Offshore Wind Turbine.
- Benyamin Schliffke: École Centrale de Nantes, 2022. Experimental characterisation of the far wake of a modelled floating wind turbine as a function of incoming swell.
- Astrid Nybø: University of Bergen, 2022. The impact of turbulence modelling on large offshore wind turbine response

- Elie Rongé: University of Strathclyde, 2024. Application of high-order hydrodynamic models to floating offshore wind TLP: numerical and experimental analysis
- Seung-Yoon Han: École Centrale de Nantes, 2024. Hydrodynamic analysis and numerical modelling of heave plates for floating wind turbines
- Anja Schnepf: University of Stavanger, 2024. Design Optimisation of Power Cable Configurations for Floating Offshore Wind Turbines

Internal administrator for PhD thesis assessment committees:
- Astrid Brotkorb
- Thomas Hansen Viuff
- Jone Torsvik
- Farid Moghadam
- Nathalie Ramos

Reviewer: Marine Structures, Ocean Engineering, OMAE, ISOPE, Marine Science and Application, Wind Energy, Wind Energy Science

Conference organization: Topic organizer, OMAE (2016-2023). WESC 2021 and 2023

Invited expert: IEA Wind task 11 topical expert meetings 88 (Three-Way Verification and Validation Between Data, High-Fidelity Models, And Engineering Models) and 99 (Floating Offshore Wind Array Challenges and Opportunities)

Invited lecture: SJTU Summer School 2021, Blue Economy CRC Webinar Sep 1st 2022 (Trends, Challenges, and Future Perspectives for Floating Offshore Wind Turbine Development)

PUBLICATIONS

Journal Articles

78. Abdelmoteleb, S.-E.; **Bachynski-Polić, E.E.** A frequency-domain optimization procedure for catenary and semi-taut mooring systems of floating wind turbines. *Marine Structures* 2025

77. Krathe, V. L.; Jonkman, J. M.; Gebel, J. V.; Rivera Arreba, I.; Rasekhi Nejad, A.; **Bachynski-Polić, E.E**. Investigation of Main Bearing Fatigue Estimate Sensitivity to Synthetic Turbulence Models Using a Novel Drivetrain Model Implemented in OpenFAST. *Wind Energy* 2025

76. Ran, X.; **Bachynski-Polić, E.E**. Time-domain simulation, fatigue and extreme responses for a fully flexible TLP floating wind turbine. *Marine Structures* 2025.

75. Rohrer, P.J., **Bachynski-Polić, E.E**. Analytical gradients of first-order diffraction and radiation forces for design optimization of floating structures, *Applied Ocean Research*, Volume 152, 104198, 2024.

74. Han, S.-Y., Bouscasse, B., Leroy, V., Delacroix, S., Bonnefoy, F., **Bachynski-Polic, E. E.** Experimental study of wave diffraction loads on a vertical circular cylinder with heave plates at deep and shallow drafts. *Ocean Engineering*, 312, 118970, 2024.

73. Baudino Bessone, M., Singh, D., Kalimeris, T., **Bachynski-Polić, E**., Viré, A. Surrogate-assisted optimization of floating wind turbine substructure. *Journal of Physics: Conference Series*, 2767 062032, 2024.

72. Alkarem, Y.R., Huguenard, K., Verma, A.S., van Binsbergen, D., **Bachynski-Polić, E**., Nejad, A.R. Passive Mooring-based Turbine Repositioning Technique for Wake Steering in Floating Offshore Wind Farms. *Journal of Physics: Conference Series*, 2767 092056, 2024.

71. Katsikogiannis, G., Haver, S. K., **Bachynski-Polić, E.E.** Assessing some statistical and physical modelling uncertainties of extreme responses for monopile-based offshore wind turbines, using metocean contours. *Applied Ocean Research*, 2024.

70. Li, H., Gao, Z., **Bachynski-Polić, E.E.**, Zhao, Y., Fiskvik, S. Effect of floater flexibility on global dynamic responses of a 15-MW semi-submersible floating wind turbine. *Ocean Engineering*, 2023.

69. Messmer, T., Ran, X., Benifla, V., Lutz, M., Adam, F., **Bachynski-Polić, E.E.** Overview of the potential of floating wind in Europe based on met-ocean data derived from the ERA5-dataset. *Journal of Physics: Conference Series (JPCS)*, 2023

68. Ran, X., Leroy, V, **Bachynski-Polic, E.E.** Hydroelastic response of a flexible spar floating wind turbine: Numerical modelling and validation. *Ocean Engineering*, 2023.

67. Rivera Arreba, I., Wise, A. S., Eliassen, L. V., **Bachynski-Polić, E.E.** Effect of atmospheric stability on the dynamic wake meandering model applied to two 12 MW floating wind turbines. *Wind Energy*, 2023.

66. Rivera Arreba, I., Li, Z., Yang, X., **Bachynski-Polić, E.E.** Comparison of the dynamic wake meandering model against large eddy simulation for horizontal and vertical steering of wind turbine wakes. *Renewable Energy*, 2023.

65. Katsikogiannis, G., Hegseth, J.M., **Bachynski-Polić, E.E.**, Application of a lumping method for fatigue design of monopile-based wind turbines using fully-coupled and simplified models. *Applied Ocean Research*, Vol. 120, 102998, 2022.

64. Sørum, S.H., Katsikogiannis, G., **Bachynski-Polić, E.E.**, Amdahl, J., Page, A.M., Klinkvort, R.T.. Fatigue design sensitivities of large monopile offshore wind turbines. *Wind Energy*, vol 25, 10, p1684-1709, 2022.

63. Rivera Arreba, I., Wise, A.S., Hermile, M., Chow, F.K., **Bachynski-Polić, E.E.**. Effects of atmospheric stability on the structural response of a 12 MW semisubmersible floating wind turbine. *Wind Energy*, vol 25, 11, p1917-1937, 2022.

62. Cao, Q., **Bachynski-Polić, E.E.**, Gao, Z., Xiao, L., Cheng, Z., Liu, M.. Experimental and numerical analysis of wind field effects on the dynamic responses of the 10 MW SPIC floating wind turbine concept. *Ocean Engineering*, vol 261, 112151, 2022.

61. Sørum, S. H., **Bachynski-Polić, E.E.**, Amdahl, J. Wind and soil model influences on the uncertainty in fatigue of monopile supported wind turbines. *Journal of Physics: Conference Series*, 2362 012001, 2022.

60. Rohrer, P. J., **Bachynski-Polić, E.E.**, Collette, M. Towards gradient-based design optimization of fully-flexible tension-leg platform wind turbines. *Journal of Physics: Conference Series*, 2362 012001, 2022.

59. Hoseini Dadmarzi, F. **Bachynski-Polić, E.E.**. Comparison of laboratory wave generation techniques on response of a large monopile in irregular sea. *Journal of Physics: Conference Series*, 2362 012001, 2022.

58. Abdelmoteleb, S., Escalera Mendoza, A.S., dos Santos, C.R., **Bachynski-Polić, E.E.**, Griffith, D.T., Oggiano, L. Preliminary Sizing and Optimization of Semisubmersible Substructures for Future Generation Offshore Wind Turbines. *Journal of Physics: Conference Series*, 2362 012001, 2022.

57. Leroy, V.; Delacroix, S.; Merrien, A.; **Bachynski-Polić, E.** & Gilloteaux, J.-C.. Experimental investigation of the hydro-elastic response of a spar-type floating offshore wind turbine. *Ocean Engineering*, Volume 255, 111430, 2022.

56. Sergiienko, N.; da Silva, L.; **Bachynski-Polić, E.**; Cazzolato, B.; Arjomandi, M. & Ding, B.. Review of scaling laws applied to floating offshore wind turbines. *Renewable and Sustainable Energy Reviews*, Volume 162, 112477, 2022.

55. Silva de Souza, C.E. and **Bachynski-Polić, E.E.** "Design, structural modeling, control, and performance of 20 MW spar floating wind turbines." *Marine Structures*, Volume 84, 103182, 2022.

54. Wang, L., Robertson, A., Jonkman, J., Yu. Y.-H., Koop, A., Borràs Nadal, A., Li, H., **Bachynski-Polić. E.**, Pinguet, R., Shi, W., Zeng, X., Zhou, Y., Xiao, Q., Kumar, R., Sarlak, H., Ransley, E., Brown, S., Hann, M., Netzband, S., Wermbter, M., Méndez López, B.. OC6 Phase Ib: Validation of the CFD predictions of difference-frequency wave excitation on a FOWT semisubmersible, *Ocean Engineering*, Volume 241, 2021, 110026.

53. Bergua, R. et al. OC6 Phase II: Integration and verification of a new soil–structure interaction model for offshore wind design. *Wind Energy*, 1- 18, 2021.

52. Li, H.; **Bachynski-Polić, E. E**. Analysis of difference-frequency wave loads and quadratic transfer functions on a restrained semi-submersible floating wind turbine. *Ocean Engineering*. vol. 232 (109165). 2021.

51. Li, H.; **Bachynski-Polić, E.E.** Validation and application of nonlinear hydrodynamics from CFD in an engineering model of a semi-submersible floating wind turbine. *Marine Structures*. vol. 79 (103054), 2021.

50. Leroy, V.; **Bachynski-Polić, E.E**.; Babarit, A; Ferrant, P; Gilloteaux, J-C. A weak-scatterer potential flow theory-based model for the hydroelastic analysis of offshore wind turbine substructures. *Ocean Engineering*. vol. 238, 2021.

49. Li, H. ; **Bachynski-Polić, E.E.**. Experimental and numerically obtained low-frequency radiation characteristics of the OC5-DeepCwind semisubmersible. *Ocean Engineering*, Vol. 232, 2021.

48. Hegseth, J.M.; **Bachynski, E.E.**; Leira, B.J. Effect of environmental modelling and inspection strategy on the optimal design of floating wind turbines. *Reliability Engineering & System Safety*, Vol. 214, 2021.

47. Katsikogiannis, G.; Sørum, S.H.; **Bachynski, E.E**.; Amdahl, J. Environmental lumping for efficient fatigue assessment of large-diameter monopile wind turbines. *Marine Structures.* Vol 77, 2021.

46. Li, H.; **Bachynski, E.E**.. Experimental and numerical investigation of nonlinear diffraction wave loads on a semi-submersible wind turbine. *Renewable Energy*. Vol 171, 709-727, 2021

45. Wang, S.; Nejad, A.R.; **Bachynski, E.E**.; Moan, T. A comparative study on the dynamic behaviour of 10 MW conventional and compact gearboxes for offshore wind turbines. *Wind Energy*. 2021.

44. Moan, T.; Gao, Z.; **Bachynski, E.E.**; Rasekhi Nejad, A. Recent Advances in Integrated Response Analysis of Floating Wind Turbines in a Reliability Perspective. *Journal of Offshore Mechanics and Arctic Engineering*. Vol 142, 2020.

43. **Bachynski, E.E**.; Thys, M.; Dadmarzi, F.H. Observations from hydrodynamic testing of a flexible, large-diameter monopile in irregular waves. *Journal of Physics: Conference Series (JPCS).* Vol 1669, 2020.

42. Hegseth, J.M.; **Bachynski, E.E.**; Martins, J.R.R.A.. Design Optimization of Spar Floating Wind Turbines Considering Different Control Strategies. *Journal of Physics: Conference Series (JPCS).* Vol 1669, 2020.

41. Lee, C.F.; **Bachynski, E.E.**; Nejad, A.R.. Consequences of load mitigation control strategies for a floating wind turbine. *Journal of Physics: Conference Series (JPCS).* Vol 1669, 2020.

40. Leroy, V.; **Bachynski, E.E.**; Gilloteaux, J-C.; Babarit, A.; Ferrant, P.. Non-linear hydroelastic response of a monopile foundation in regular waves. *Journal of Physics: Conference Series (JPCS).* Vol 1669, 2020.

39. Suja-Thauvin, L.; **Bachynski, E. E.**; Pierella, F.; Borg, M.; Krokstad, J. R; Bredmose, H. Critical assessment of hydrodynamic load models for a monopile structure in finite water depth. *Marine Structures*. vol. 72, 2020.

38. Hegseth, J.M.; **Bachynski, E.E.**; Martins, J.R.R.A; Integrated design optimization of spar floating wind turbines. *Marine Structures*. vol. 72, 2020. **(Moan-Faltinsen Best Paper Award 2020)**

37. Wise, A.S.; **Bachynski, E. E.**; Wake meandering effects on floating wind turbines. *Wind Energy*, 2020.

36. Smilden, S; Sørum, S. H.; **Bachynski, E. E.**; Sørensen, A. J.; Amdahl, J. Post-installation adaptation of offshore wind turbine controls. *Wind Energy*, 2020.

35. Silva de Souza, C. E., and **Bachynski, E. E.** "Effects of Hull Flexibility on the Structural Dynamics of a Tension Leg Platform Floating Wind Turbine." ASME. *J. Offshore Mech. Arct. Eng*. February 2020; 142(1): 011903.

34. Cho, S.; **Bachynski, E. E.**; Rasekhi Nejad, A.; Gao, Z.; Moan, T. Numerical modeling of the hydraulic blade pitch actuator in a spar-type floating wind turbine considering fault conditions and their effects on global dynamic responses. *Wind Energy*. vol. 23 (2), 2020.

33. Robertson, A. N.; **Bachynski, E. E.**; Gueydon, S.; Wendt, F.; Schünemann, P. Total experimental uncertainty in hydrodynamic testing of a semisubmersible wind turbine, considering numerical propagation of systematic uncertainty. *Ocean Engineering*. vol. 195, 2020.

32. Katsikogiannis, G.; **Bachynski, E.E.**; Page, A.M. Fatigue sensitivity to foundation modelling in different operational states for the DTU 10MW monopile-based offshore wind turbine. *Journal of Physics: Conference Series*, Volume 1356, Number 1, 2019.

31. Wise, A. and **Bachynski, E.E.** Analysis of wake effects on global responses for a floating two-turbine case. *Journal of Physics: Conference Series*, Volume 1356, Number 1, 2019.

30. Rivera-Arreba, I.; Bruinsma, N.; **Bachynski, E.E.**; Viré, A.; Paulsen, B.T..; Jacobsen, N. G. Modeling of a semisubmersible floating offshore wind platform in severe waves. *Journal of Offshore Mechanics and Arctic Engineering* 2019.

29. **Bachynski, E.E.;** Thys, M.; Delhaye, V**.** Dynamic response of a monopile wind turbine in waves: Experimental uncertainty analysis for validation of numerical tools. *Applied Ocean Research* 2019 ; 89: 96-114. https://doi.org/10.1016/j.apor.2019.05.002

28. Hegseth, J.M.; **Bachynski, E.E.** A semi-analytical frequency domain model for efficient design evaluation of spar floating wind turbines. *Marine Structures* 2019; 64:186-210

27. Souza, C.E.S., **Bachynski, E.E.,** Changes in surge and pitch decay periods of floating wind turbines for varying wind speed, *Ocean Engineering*, 2019; 180: 223-237. https://doi.org/10.1016/j.oceaneng.2019.02.075.

26. **Bachynski, E.E.,** Eliassen, L. The effects of coherent structures on the global response of floating offshore wind turbines. *Wind Energy* 2019; 22: 219– 238. https://doi.org/10.1002/we.2280

25. Nejad, A.R., **Bachynski, E.E.**, Moan T. Effect of Axial Acceleration on Drivetrain Responses in a Spar-Type Floating Wind Turbine. ASME. *J. Offshore Mech. Arct. Eng.* 2019;141(3):031901-031901-7. doi:10.1115/1.4041996.

24. Smilden, E., **Bachynski, E.E.**, Sørensen, A.J., Amdahl, J. Wave Disturbance Rejection for Monopile Offshore Wind Turbines. *Wind Energy,* 2019, 22: 89– 108. https://doi.org/10.1002/we.2273

23. **Bachynski, E. E.,** Pakozdi, C., Östman, A., and Stansberg, C.T. Computational Fluid Dynamics Reproduction of Nonlinear Loads on a Vertical Column during Extreme Irregular Wave Events. *Journal of Offshore Mechanics and Arctic Engineering* 2018, Volume 140.

22. Smilden, E., **Bachynski, E.E.**, Sørensen, A.J., Amdahl, J.. Site-specific controller design for monopile offshore wind turbines. *Marine Structures* 2018, Volume 61, p. 503-523. https://doi.org/10.1016/j.marstruc.2018.03.002

21. Suja-Thauvin, L., Krokstad, J.R., **Bachynski, E.E.**, Critical assessment of non-linear hydrodynamic load models for a fully flexible monopile offshore wind turbine. *Ocean Engineering*, Volume 164, 15 September 2018, Pages 87-104, ISSN 0029-8018, https://doi.org/10.1016/j.oceaneng.2018.06.027.

20. **Bachynski, E.E.**, Kristiansen, T., Thys, M**.** Experimental and numerical investigations of monopile ringing in irregular finite-depth water waves. *Applied Ocean Research* 2017, Volume 68. p. 154-170.

19. Suja-Thauvin, L., Krokstad, J., **Bachynski, E.E.**, de Ridder, E-J. Experimental results of a multimode monopile offshore wind turbine support structure subjected to steep and breaking irregular waves. *Ocean Engineering*, 2017, Volume 146. p. 339-351.

18. Karimirad, M., **Bachynski, E.E.** Sensitivity Analysis of Limited Actuation for Real-time Hybrid Model Testing of 5MW Bottom-fixed Offshore Wind Turbine. *Energy Procedia*, 2017, Volume 137, p. 14-25.

17. Velarde, J., **Bachynski, E.E.**. Design and fatigue analysis of monopile foundations to support the DTU 10 MW offshore wind turbine. *Energy Procedia*, 2017, Volume 146, p. 3-13.

16. Luan, C., Chabaud, V., **Bachynski, E.E.**, Gao, Z., Moan, T. Experimental validation of a time-domain approach for determining sectional loads in a floating wind turbine hull subjected to moderate waves. *Energy Procedia*, 2017, Volume 137, p 366-381.

15. Chen, M.O., **Bachynski, E.E.**, Økland, O.D. Dynamic Responses of Jacket-Type Offshore Wind Turbines Using Decoupled and Coupled Models. *Journal of Offshore Mechanics and Arctic Engineering*, 2017. (doi:10.1115/1.4035772)

14. Leimeister, M., **Bachynski, E.E.**, Muskulus, M., Thomas, P. Rational upscaling of a semi-submersible floating platform supporting a wind turbine. Energy Procedia, 2016:94, 434-442.

13. Nejad, A., **Bachynski, E.E.**, Li, L., Moan, T. Effect of Tower-top Axial Acceleration on Monopile Offshore Wind Turbine Drivetrains. Energy Procedia, 2016:94, 487-496.

12. Robertson, A.N., Wendt, F., Jonkman, J.M., Popko, W., Borg, M., Bredmose, H., Schlutter, F., Qvist, J., Bergua, R., Harries, R., Yde, A., Nygaard, T.A., de Vaal, J.B., Oggiano, L., Bozonnet, P., Bouy, L., Sanchez, C.B., García, R.C., **Bachynski, E.E**., Tu, Y., Bayati, I.,

Borisade, F., Shin, H., van der Zee, T., Guerinel, M.. OC5 Project Phase Ib: Validation of Hydrodynamic Loading on a Fixed, Flexible Cylinder for Offshore Wind Applications. Energy Procedia 2016:94, 82-101.

11. Nematbakhsh,A., **Bachynski, E.E.**, Gao, Z., Moan, T. Comparison of Wave Load Effects on a TLP Wind Turbine by Using Computational Fluid Dynamics and Potential Flow Theory Approaches. Applied Ocean Research, 2015: 53, 142–154.

10. **Bachynski, E.E.** Chabaud, V., Sauder, T. Real-time hybrid model testing of floating wind turbines: sensitivity to limited actuation. Energy Procedia, 2015, vol 80.

9. Nejad, A.R., **Bachynski, E.E.,** Kvittem, M.I., Luan, C., Gao, Z., Moan, T. Stochastic dynamic load effect and fatigue damage analysis of drivetrains in land-based and TLP, spar, and semi-submersible floating wind turbines. Marine Structures, 2015: 422, 137-153.

8. Nejad, A.R., **Bachynski, E.E.,** Gao, Z., Moan, T. Fatigue damage comparison of mechanical components in a land-based and spar floating wind turbine. Proceedia Engineering 101 (2015) 330-338.

7. **Bachynski, E.E.**, Kvittem, M.I., Luan, C., Moan, T, 2014. Wind-wave misalignment effects on floating wind turbines: motions and tower load effects. Journal of Offshore Mechanics and Arctic Engineering; volume 136, pp. 041902-1-- 041902-12. doi:10.1115/1.4028028.

6. **Bachynski, E.E.,** Moan, T, 2014. Ringing loads on tension leg platform wind turbines. Ocean Engineering; volume 84, pp. 237-248.

5. **Bachynski, E.E.,** Etemaddar, M., Kvittem, M.I., Luan, C., Moan, T., 2013. Dynamic Analysis of floating wind turbines during pitch actuator fault, grid loss, and shutdown. Energy Procedia volume 35, pp. 210-222.

4. **Bachynski, E.E.,** Moan, T, 2012. Design Considerations for Tension Leg Platform Wind Turbines, Marine Structures, 2012; volume 29 (1), pp. 89-114.

3. Kvittem, M.I., **Bachynski, E.E.**, Moan, T., 2012. Effects of hydrodynamic modelling in fully coupled simulations of a semi-submersible wind turbine. Energy Procedia, volume 24, pp. 351-362. doi: 10.1016/j.egypro.2012.06.118.

2. **Bachynski, E.E.**, Young, Y.L., Yeung, R.W., 2012, Analysis and Optimization of a Tethered Wave Energy Converter in Irregular Waves, Renewable Energy, Volume 48, pp. 133-145. doi:10.1016/j.renene.2012.04.044

1. **Bachynski, E**., Motley, M.R., Young, Y.L.. 2012, Dynamic Hydroelastic Scaling of the Underwater Shock Response of Composite Marine Structures, Journal of Applied Mechanics, Volume 79, Issue 1, 014501 (7 pages) doi:10.1115/1.4004535.

<u>Peer-Reviewed Conference Papers</u>

35. **Bachynski-Polić, E.E..** Storm characteristics for monopile wind turbine foundation design. *Proceedings of the ASME 2023 5th International Offshore Wind Technical Conference*. *ASME*

2023 5th International Offshore Wind Technical Conference. Exeter, UK. December 18–19, 2023. V001T01A006.

34. Cao, Q.; **Bachynski-Polić, E. E**.; Gao, Z.; Xiao, L.; Cheng, Z.; Liu, M. Analysis of a Hybrid Mooring System Concept for a Semi-Submersible Wind Turbine in Intermediate Water Depth Under Operational, Extreme, and Yaw Error Conditions. *Proceedings of the ASME 2022 41st International Conference on Ocean, Offshore and Arctic Engineering*. Volume 8: Ocean Renewable Energy. The American Society of Mechanical Engineers (ASME) Hamburg, Germany. June 5–10, 2022. V008T09A017. **OMAE ORE Best Paper Award

33. Aksnes, V, Alsos, H, **Bachynski-Polić, E**, Berthelsen, PA, Delhaye, V, Furevik, BR, Jostad, HP, Kristiansen, T, & Ommani, B. "On Common Research Needs for the Next Generation of Floating Support Structures." *Proceedings of the ASME 2022 41st International Conference on Ocean, Offshore and Arctic Engineering*. *Volume 4: Ocean Space Utilization*. Hamburg, Germany. June 5–10, 2022. V004T05A027.

32. Pakozdi, C., Fouques, S., Thys, M., Kamath, A., Wang, W., Dadmarzi, F.H., **Bachynski, E**., & Bihs, H. Validation of Numerical Wave Tank Simulations Using REEF3D With JONSWAP Spectra in Intermediate Water Depth. *Proceedings of the ASME 2020 39th International Conference on Ocean, Offshore and Arctic Engineering*. Volume 1: Offshore Technology. Virtual, Online. August 3–7, 2020. V001T01A012.

31. Li, H.; **Bachynski, E. E.** "Numerical Simulation of Fully Nonlinear Interaction Between Regular and Irregular Waves and a 2D Floating Body." *Proceedings of the ASME 2019 38th International Conference on Ocean, Offshore and Arctic Engineering*. *Volume 7A: Ocean Engineering*. Glasgow, Scotland, UK. June 9–14, 2019. OMAE2019-96680

30. H. Dadmarzi, F; Thys, M; **Bachynski, E. E.** "Validation of Hydrodynamic Loads on a Large-Diameter Monopile in Regular Waves." *Proceedings of the ASME 2019 38th International Conference on Ocean, Offshore and Arctic Engineering*. *Volume 7A: Ocean Engineering*. Glasgow, Scotland, UK. June 9–14, 2019. OMAE2019-95929.

29. **Bachynski, E. E.**; Page, A.; Katsikogiannis, G. "Dynamic Response of a Large-Diameter Monopile Considering 35-Hour Storm Conditions." *Proceedings of the ASME 2019 38th International Conference on Ocean, Offshore and Arctic Engineering*. *Volume 10: Ocean Renewable Energy*. Glasgow, Scotland, UK. June 9–14, 2019. OMAE2019-95170.

28. Robertson, A.N., **Bachynski, E.E.**, Gueydon, S., Wendt, F., Schünemann, P., Jonkman, J. Assessment of experimental uncertainty for a floating wind semisubmersible under hydrodynamic loading. In: *Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering.* Madrid, Spain, no. OMAE2018-77703.

27. Hegseth, J.M., **Bachynski, E.E.,** Karimirad, M. Comparison and validation of hydrodynamic load models for a semi-submersible floating wind turbine. In*: Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering*. Madrid, Spain, no. OMAE2018-77676.

26. Silva de Souza, C.E., **Bachynski, E.E.** Effects of hull flexibility on the structural dynamics of a TLP floating wind turbine. In: *Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering*. Madrid, Spain, no. OMAE2018-77310.

25. Rivera-Arreba, I., Bruinsma, N., **Bachynski, E.E.**, Viré, A., Paulsen, B.T., Jacobsen, N.G. Modelling of a semisubmersible floating wind platform in severe waves. In: *Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering*. Madrid, Spain, no. OMAE2018-77680.

24. Popko, W. et al. Verification of a numerical model of the offshore wind turbine from the Alpha Ventus wind farm within OC5 phase III. In: *Proceedings of the 37th International Conference on Ocean, Offshore and Arctic Engineering*. Madrid, Spain, no. OMAE2018-77589.

23. **Bachynski, E.E.,** Kristiansen T. Reproduction of monopile ringing events in reduced-duration model tests. In: *Proceedings of the 36th International Conference on Ocean, Offshore and Arctic Engineering*. Trondheim, Norway, no. OMAE2017-61034.

22. Eliassen, L., **Bachynski E.E.** The effect of turbulence model on the response of a large floating wind turbine. In: *Proceedings of the 36th International Conference on Ocean, Offshore and Arctic Engineering*. Trondheim, Norway, no. OMAE2017-61179.

21. Karimirad, M. **Bachynski, E.E.**, Berthelsen, P.A., Ormberg H. Comparison of real-time hybrid model testing of a braceless semi-submersible wind turbine and numerical simulations. In: *Proceedings of the 36th International Conference on Ocean, Offshore and Arctic Engineering.* Trondheim, Norway, no. OMAE2017-61121.

20. Kristiansen, T., **Bachynski, E.E.**, Bickert, F., Hniche, A., Kocher, V., Liandrat A. Aspects in model testing of a monopile in steep waves. In: *Proceedings of the 36th International Conference on Ocean, Offshore and Arctic Engineering*. Trondheim, Norway, no. OMAE2017-61765.

19. Nejad, A.R., **Bachynski, E.E.**, Moan, T. On tower top axial acceleration and drivetrain responses in a spar-type floating wind turbine. In: *Proceedings of the 36th International Conference on Ocean, Offshore and Arctic Engineering*. Trondheim, Norway, no. OMAE2017-62314.

18. Smilden, E., **Bachynski, E.E.**, Sørensen, A.J.. Identification of key contributors to lifetime accumulated fatigue damage in offshore wind turbine support-structures. In: *Proceedings of the 36th International Conference on Ocean, Offshore and Arctic Engineering*. Trondheim, Norway, no. OMAE2017-61708.

17. Pákozdi, C; Östman, A., **Bachynski, E.E.**, Stansberg, C.T., 2016. CFD Reproduction of model test generated extreme irregular wave events and nonlinear loads on a vertical column. In: *Proceedings of the 35th International Conference on Ocean, Offshore and Arctic Engineering*, Busan, South Korea, no. OMAE2016-54869.

16. Sauder, T.; Chabaud, V.; Thys, M.; **Bachynski, E. E**. & Sæther, L. O., 2016. Real-Time Hybrid Model Testing of a Braceless Semi-Submersible Wind Turbine: Part I: The Hybrid Approach. In: *Proceedings of the 35th International Conference on Ocean, Offshore and Arctic Engineering*, Busan, South Korea, no. OMAE2016-54435.

15. **Bachynski, E. E.;** Thys, M.; Sauder, T.; Chabaud, V. & Sæther, L. O., 2016. Real-Time Hybrid Model Testing of a Braceless Semi-Submersible Wind Turbine: Part II: Experimental Results. In: *Proceedings of the 35th International Conference on Ocean, Offshore and Arctic Engineering*, Busan, South Korea, no. OMAE2016-54437.

14. Berthelsen, P. A.; **Bachynski, E. E.**; Karimirad, M. & Thys, M., 2016. Real-time Hybrid Model Testing of a Braceless Semi-Submersible Wind Turbine. Part III: Calibration of a Numerical Model. In: *Proceedings of the 35th International Conference on Ocean, Offshore and Arctic Engineering*, Busan, South Korea, no. OMAE2016-54640.

13. **Bachynski, E. E.,** and Ormberg, H., 2015. Hydrodynamic modeling of large-diameter bottom-fixed offshore wind turbines. In: *Proceedings of the 34th International Conference on Ocean, Offshore and Arctic Engineering*, St. John's, NL, Canada, no. OMAE2015-42028.

12. **Bachynski. E. E.,** and Ormberg, H. Comparison of Engineering Models for the Aerodynamic Load Distribution along a Wind Turbine Blade. *Proceedings of the 25th International Offshore and Polar Engineering Conference*, Kona, Hawaii, USA, June 2015. 2015-TPC-0406.

11. Ormberg, H., and **E.E. Bachynski**. Sensitivity of Estimated Tower Fatigue to Wind Modeling for a Spar Floating Wind Turbine. *Proceedings of the 25th International Offshore and Polar Engineering Conference*, Kona, Hawaii, USA, June 2015. 2015-TPC-0729.

10. **Bachynski, E. E.,** and Moan, T., 2014. Second order wave force effects on tension leg platform wind turbines in misaligned wind and waves. In: *Proceedings of the 33rd International Conference on Ocean, Offshore and Arctic Engineering*, San Francisco, California, USA, no. OMAE2014-23131.

9. Ong, M. C.; **Bachynski, E. E.;** Økland, O. D. & Passano, E. , 2014. Dynamic Responses of a Jacket-Type Offshore Wind Turbine using Decoupled and Coupled Models. In: *Proceedings of the 33rd International Conference on Ocean, Offshore and Arctic Engineering*, San Francisco, CA, USA, no. OMAE2014-24246.

8. Nematbakhsh, A., **Bachynski E.E.**, Gao, Z. and Moan, T. , 2014. Comparison of Wave Induced Response of a TLP Wind Turbine Obtained by CFD Method and Potential Theory. *Proceedings of the 22nd International Offshore (Ocean) and Polar Engineering Conference*, Busan, Korea. June 2014. 2014-TPC-0365.

7. **Bachynski, E.E.,** Moan, T. Hydrodynamic Analysis of Tension Leg Platform Wind Turbines. *Proceedings of the ASME 2013 32nd International Conference on Ocean, Offshore and Arctic Engineering*, Nantes, France. OMAE2013-10120.

6. **Bachynski, E.E.,** Moan, T. Point Absorber Design for a Combined Wind and Wave Energy Converter on a Tension-Leg Support Structure. *Proceedings of the ASME 2013 32nd International Conference on Ocean, Offshore and Arctic Engineering*, Nantes, France. OMAE2013-10429.

5. **Bachynski, E.E.**, Moan, T. Linear and Nonlinear Analysis of Tension Leg Platform Wind Turbines. *Proceedings of the 22nd International Offshore (Ocean) and Polar Engineering Conference*, Rhodes, Greece, June 2012. 2012-TPC-0629.

4. Ormberg, H., and **E.E. Bachynski**. Global Analysis of Floating Wind Turbines: Code Development, Model Sensitivity, and Benchmark Study. *Proceedings of the 22nd International Offshore (Ocean) and Polar Engineering Conference*, Rhodes, Greece, June 2012. 2012-TPC-0734.

3. T. Moan, Z. Gao, M. Karimirad, **E.E. Bachynski**, M. Etemaddar, Z. Jiang, M.I. Kvittem, M. Muliawan, Y. Xing. Recent Developments of the Design and Analysis of Floating Wind Turbines. *ICSOT: Developments In Fixed & Floating Offshore Structures*, 23 – 24 May 2012, Busan, Korea.

2. **Bachynski, E.,** Young, Y. L., Yeung, R. W., Analysis and Dynamic Scaling of Tethered Wave Energy Converters in Irregular Waves, *Proceedings of the ASME 2011 30th International Conference on Ocean, Offshore and Arctic Engineering*, Rotterdam, the Netherlands. OMAE2011-49684.

1. **Bachynski, E.,** Young, Y. L., Yeung, R. W., 2010, Performance of a Tethered Point Wave-Energy Absorber in Regular and Irregular Waves, *Proceedings of ASME 2010 3rd Joint US-European Fluids Engineering Summer Meeting and 8th International Conference on Nanochannels, Microchannels, and Minichannel*s. FEDSM2010-ICNMM2010.

Book Chapters

Offshore support structure design. In: *Renewable Energy from the Oceans: From wave, tidal and gradient systems to offshore wind and solar*. IET 2019. DOI:10.1049/pbpo129e_ch7

Fixed and Floating Offshore Wind Turbine Support Structures. in*: Offshore Wind Energy Technology*. Wiley 2018. ISBN 978-1-119-09779-2. p. 103-141.

Structural Design. in: *Floating Offshore Wind Energy*. Springer 2016. ISBN 978-3-319-29396-7. p. 182-196.

Abstracts

Insel, N., Ehlers, T.A., Poulsen, C.J., **Bachynski, E.**, Schaller, M., 2006. Quantifying Quaternary climate variability and erosion of the central Andes with paleoclimate modeling and cosmogenic 10Be; Eos, Trans. AGU, 87, Fall Meet. Suppl., Abstract T11A-0413

Other

Bachynski, E.E., Kvittem, M.I.. På dypt vann. Dagens Næringsliv. 2 Nov 2012 p 40.

Silva de Souza, C.E.; Berthelsen, P.A.; Eliassen, L.; **Bachynski, E.E.;** Engebretsen, E.; Haslum, H. Definition of the INO WINDMOOR 12 MW base case floating wind turbine. Trondheim: SINTEF Ocean 2021 (ISBN 9788271744076). 78 pages.

Collette, M.; **Bachynski-Polić, E.E**., Downes, J., Ehlers, S., Kana, A., Liu, Y., Seyffert, H. Forced Innovation. (mt) Marine Technology. 2022.

Leroy, V.; Delacroix, S.; Merrien, A.; **Bachynski-Polić, E. E**.; Gilloteaux, J.-C. HELOFOW Project Database. https://zenodo.org/record/8108629 2023

TEACHING EXPERIENCE

MSc course module Integrated Dynamic Analysis of Wind Turbines, 3.75 ECTS, 5th year, NTNU

2014-2015: Delivered 3 lectures per year
2016-2018: Organized course, developed course project, and delivered 9 lectures per year
2019: Organized course, developed course project, and delivered 3 lectures
2020-2023: Organized course, developed course project, and delivered 6 lectures

MSc course TMR4182 Marine Dynamics, NTNU

2017-2019: 10 lectures per year, 1/3 of 7.5 ECTS course, 3rd year (spring)
2019: revised and took over primary responsibility (fall). 16 lectures per year. 7.5 ECTS, 3rd year (fall) – mandatory for all 3rd year students in the marine technology master + some 2-year students.
2020-2021: Course responsible. Hybrid (digital/in-person) teaching. 16 lectures.
2022: 16 lectures.
2023: Course responsible. 16 lectures.

MSc course TMR4305 Dynamic Analysis of Marine Structures, 3.75 ECTS, 5th year, NTNU

2018: Substitute lecturer for most of the course

MSc course Multidisciplinary Design Optimization, 3.75 ECTS, 5th year, NTNU

2019: Developed course, delivered 10 lectures
2020-2021: Organized course, revised exercises
2023: Organized course, delivered 6 lectures, revised exercises and format.

HAV6000/HAV6001: Introduction to offshore wind (continuing education course)

2023: 5 lectures
2024: 5 lectures

PhD course MR8503: Stochastic Methods Applied in Nonlinear Analysis of Marine Structures

Stochastic dynamics of marine structures, Univ. of Michigan, master/PhD level

2018: Delivered 5 lectures
2020: Delivering 5 lectures and developing course project.

Advanced Marine Design, Univ. of Michigan, master/PhD level

2020: Delivered 4 lectures and designed wind turbine optimization assignment

Erasmus Mundus Short Course on Integrated Dynamic Analysis of Floating Wind Turbines, E.C. Nantes (virtual), 2021 (8 lecture hours).

2017, 2018, 2019, 2021: Short course at Offshore Mechanics and Arctic Engineering Conference

Supervision of master students

1. Joey Velarde, 2015.8-2016.6. EWEM*. Design of Monopile Foundations to Support the DTU 10 MW Offshore Wind Turbine.
2. Kristian Freng Svendsen, 2015.8-2016.6. EWEM. Structural Design and Dynamic Analysis of a Tension Leg Platform Wind Turbine, Considering Elasticity in the Hull.

3. Mareike Leimeister, 2015.8-2016.6. EWEM. Rational Upscaling and Modelling of a Semi-Submersible Floating Offshore Wind Turbine.
4. Mohibb Ghani Malik, 2015.8-2016.6. Hydrodynamic Modelling Effects on Fatigue Calculations for Monopile Offshore Wind Turbines.
5. Irene Rivera Arreba, 2016.8-2017.6. EWEM. CFD calculation of nonlinear wave loads on a floating wind turbine.
6. Jingyi Yu, 2016.8-2017.6. EWEM. Efficient rotor modelling for real-time hybrid testing.
7. Oda Emilie Nilseng Danielsen, 2016.8-2017.6. Analysis of innovative mooring systems for floating semi-submersible offshore wind turbines.
8. Qian Shi, 2016.8-2017.6. EWEM. Ice detection for wind turbines.
9. Gaspar Gohin, 2017.8-2018.6. Upscaling, analysis and design of a floating vertical axis wind turbine.
10. Marius Lien Killi, 2017.8-2018.6. Hydrodynamic interaction among the pontoons of a floating bridge: effect on global responses.
11. Alvaro Ortega Nadal, 2017.8-2018.6. Time domain simulation parameters for fatigue assessment of an offshore gravity-based wind turbine.
12. Pratim Jayesh Patel, 2017.8-2018.6. Validation of nonlinear hydrodynamic load models for a monopile in long-crested waves.
13. Tiril Stenlund, 2017.8-2018.6. Mooring system design for a large floating wind turbine in shallow water.
14. Miloš Ristić, 2018.5-2018.10. Validation of Load Models and Calculations of Response for a Monopile in Steep Water Waves. (TU Berlin)
15. Megan Nissa Chan Chow, 2017.9-2018.12. EWEM. Mooring System Design for Wind Farm in Very Deep Water.
16. Chern Fong Lee, 2018.8-2019.6. Consequences of load mitigation control strategies for a floating wind turbine.
17. Daniel Kaasa, 2018.8-2019.6. Integrated dynamic analysis of a semi-submersible wind turbine considering hull flexibility
18. Chih-gang Hsu, 2018.8-2019.7. EWEM. Substructure Models for Dynamic Analysis of Floating Wind Turbines and the Effect of Hull Flexibility
19. Xuwen Wang, 2018.8-2019.6. Dynamic Analysis of Floating Wind Turbines Subjected to Deterministic Wind Gusts
20. Elise Moen, 2019.8-2020.6. Dynamic responses of monopile wind turbines subjected to nonlinear wave loads.
21. Benoit Olivier Atea de Renty, 2019.8-2020.7. Gradient-based design optimization of a semi-submersible floating wind turbine.
22. Hedda Sjøvaag and Helle Hernes, 2019.8-2020.6. Hydrodynamic analysis of a point absorbing wave energy converter in heave and surge.
23. Henning Eimstad, 2019.8-2020.6. Design load cases for offshore wind turbines.
24. Jan Ove Kvamen, 2019.8-2020.6. Mooring systems for floating wind turbine farms in deep water.
25. Vetle Kallåk, 2019.8-2020.6. Parametric design and analysis of wave-induced responses of a semi-submersible floating wind turbine platform.
26. Yucong Ma, 2019.8-2020.6. Fishtailing behavior of single point moored floating wind turbines.
27. Arsène Amoureux, 2020.8-2021.6. Linear analysis and multidisciplinary design optimization of the floater OO-Star.
28. Joar Solvang, 2020.8-2021.8. EWEM. The development of a frequency-domain multi-unit floating platform model for design optimization.
29. Mahé Hermile, 2020.8-2021.8. EWEM. Atmospheric stability effects on a spar-type floating wind turbine.

30. Matthew van der Giessen, 2020.8-2021.6. EWEM. Feasibility of mooring system optimization for floating wind turbines in deep water based on static analysis.
31. Peter Rohrer, 2021.1-2021.6. University of Michigan/Fulbright. TLPOpt: Gradient-based design optimization of large tension-leg platform wind turbines.
32. Vebjørn Brevik, 2020.8-2021.6. Elasticity, wave load modeling and upscaling of spar floating wind turbine.
33. Cecilia Saccone, 2021.8-2022.10. EWEM. Quasi-dynamic modelling of shared mooring lines for floating wind turbines.
34. Lars-Petter Solvang Johnsen, 2022.8-2023.6. Spar Floating Wind Turbine Design Optimization with Concrete Substructures.
35. Robin Nalum and Einar Steen-Johnsen, 2022.8-2023.6. Wave loads and damping of a shallow-drafted floating wind turbine.
36. Sander Nesse-Hansen, 2022.8-2023.6. Dynamics of arrays of floating structures with shared mooring.
37. Theodoros Kalimeris, 2022.8-2023.8. EWEM. Surrogate model-based optimization of floating wind turbines.
38. Aaron Henskens, 2023.1-2023.10. EWEM Examination of environmental lumping methods for fatigue assessment of floating wind turbines.
39. Anna Bettina Pedersen, 2023.8-2024.6. Performance of a 25 MW semi-submersible floating wind turbine under different control strategies.
40. Bart Savalle, 2023.8-2024.7. EWEM. Performance of a motion-compensated gripper frame for monopile installation.
41. Dieuwer Keunen, 2023.8-2024.9. EWEM. Modelling of temporary wet storage of floating offshore wind foundations.
42. Elise Aalvik and Marthe Elseth, 2023.8-2024.6. Integrated analyses of mooring lines, soil and anchors for floating wind turbines.
43. Hedda Aksnes and Sarah Elseth, 2023.8-2024.6. Roll-yaw instability of a spar wind turbine.
44. Jin-Jin Yu, 2023.8-2024.8. EWEM. Floating installation of wind turbines on semi-submersible floaters.

Co-supervision of master students

1. Mikal Espedal Hansson, 2016.1-2016.6. Main supervisor Trygve Kristiansen. Numerical Analysis of a Floating Wind Turbine: Global Load Effects in the Tower Structure.
2. Even Sandøy Nærum. 2017.1-2017.6. Main supervisor Marilena Greco. Numerical study on the challenges of floating wind turbines in intermediate depth.
3. Mildrid Haga. 2017.1-2017.6. Main supervisor Marilena Greco. Floating wind turbine hydrodynamics in intermediate depth.
4. Thijs Bouman. 2017.9-2018.11. EWEM. A Winkler Model for the Seismic Analysis of Monopile Foundations.
5. Reeti Sarkar, 2018.8-2019.9. EWEM. Impact of seabed scour on the dynamics of bottom-founded offshore wind turbines with large diameter monopiles
6. Matthijs Bussemakers, 2019.9-2020.9. EWEM. Validation of aero-hydro-servo-elastic load and motion simulations in BHawC/OrcaFlex for the Hywind Scotland floating offshore wind farm
7. Dion Koreman, 2019.9-2020.9. EWEM. An analysis of coupled ice-wind simulations in a two-dimensional environment by use of the newly developed Zero-friction contact Area variation Model for Omnidirectional Numerical Ice (ZAMBONI).
8. Michiel Bots. 2019.9-2020.9. EWEM. Heave plate hydrodynamics for floating wind turbines.
9. Nicolas Bouchet. 2021.2-2021.6. Fatigue of a composite rigid wing sail designed for the shipping industry.

10. Ufuktan Kilinc, 2021.8-2022.9. EWEM. Dynamic wind farm layout optimization: To find the optimal spots for movable floating offshore wind turbines through dynamic repositioning.
11. Yu Ma, 2021.8-2022.6. Novel Modeling and Fatigue Analysis for Early-Phase Design of a 15-MW FOWT.
12. Vignesh Balasubramaniyan, 2021.8-2022.6. Load transfer from coupled analysis to structural design of FWTs.
13. Vincenzo Ceriello, 2021.8-2022.8. EWEM. Wake Effect Mitigation of Floating Offshore Wind Farms: Combining Layout Optimization, Turbine Repositioning and Yaw-based Wake Redirection.
14. Wessel Bruinsma, 2023.8-2024.6. EWEM. Decommissioning offshore wind export cables in the North Sea.
15. Viktoria Soltesz, 2024.1-2024.6. A study relevant for the optimization of a semi-submersible crane vessel tailored for installing next generation wind turbines.

*EWEM: European Wind Energy Master – theses supervised in collaboration with TU Delft.

PROFESSIONAL MEMBERSHIPS

Society of Naval Architects and Marine Engineers
Tau Beta Pi Engineering Honors Society
Tekna (Teknisk-naturvitenskapelig forening)

INTERESTS

Studentersamfundets Symfoniorkester (2010-2020, seminar committee 2012, 2014, 2016)
Trondheim Triatlonklubb (2012 – present)
(University of Michigan) Campus Symphony Orchestra (2005-2009), co-principal cellist (2005-2008)
Michigan Pops Orchestra (2005-2009), co-principal cellist (2006-2009)
Running, bicycling, swimming, cross-country skiing