# Bladed List of Publications

Publications related to the development and usage of Bladed can be found in this document. If publications are missing or incorrectly documented, please contact: renewables.support@dnv.com

## 2023


1. Marcano, E., 2023. Load Analysis Study on +20MW Floating Offshore Wind Turbine in Bladed. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
2. Tosdevin, T., Greaves, D., Brown, S., Hann, M., Simmonds, D., Rawlinson-Smith, R., Fabregas, F., Child, B., Wigg, R., 2023. Short design events for floating turbines to speed up the prediction of design loads. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
3. Nekstad, O., 2023. Streamlining time domain fatigue analysis of floating offshore wind foundations. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
4. Moharram, H., Nim, E., 2023. Updated Internal Force Calculation in Bladed. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
5. Mangat, N., 2023. Generating Bladed Concept Models using Renewables.Architect. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
6. Sealy, D., 2023. Using Bladed in fixed sub-structure optimisation process. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
7. Moharram, H., 2023. Bladed and Sesam latest integrated workflows. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
8. Nekstad, O., 2023. Structural design of fixed offshore wind foundations. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
9. Bangga, G., 2023. New documentation system and Linearisation calculation improvements in Bladed. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
10. Hoppe, M., 2023. A practical guide to develop and test model predictive turbine controllers with Bladed. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
11. Eichelmann, T., Störtenbecker, S., 2023. Multirotor Simulation in Bladed: Space Frame Design and Alternative Yaw Concepts. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
12. Cerqueira, D., 2023. Bladed Next Gen: Upgrader Workflow Demonstration, Customer Engagement, Upcoming Features. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
13. Verdnock, H., Hach, O., 2023. The influence of structural blade parameters on aeroelastic stability analysis. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
14. Dilek, Ö., Collier, W., 2023. Aeroelastic code comparison using the IEA 22MW reference wind turbine. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
15. Torres, A., 2023. Incorporating backlash effect of yaw system in Bladed simulations for accurate turbine vibration validation. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
16. Lutz, T., Bangga, G., 2023. Utilizing 3D CFD Polar Data in BEM and Lifting Line Calculations. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
17. Jensen, S., 2023. Handling blade 6x6 mass and stiffness and axis conventions. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
18. Bangga, G., 2023. Improving deep stall predictions in Bladed. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
19. Mankar, A., 2023. Integrated analysis of fixed offshore jackets supporting wind turbines. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.

20. Sivakumarr, A., Starr, M., 2023. Seismic Analysis using Bladed (JIP ACE 1 & ACE 2) - Alleviating Challenges from Earthquakes for Wind Farms. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
21. Flavia, F., 2023. Viscous Damping Linearization for Floating Wind Control Design. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
22. Parkinson, S., 2023. Bladed floating coupled simulation themes, recent progress, roadmap. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
23. Alexandre, A., 2023. Coupling Bladed to external mooring codes. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
24. Parkinson, S., 2023. Second Order Hydrodynamic Loading. *Bladed User Conference 2023*, Hamburg, Germany, October 2023.
25. Bangga, G., 2023. Aerodynamics modeling developments in Bladed - toward improving deep stall predictions. *EERA JP Wind Innovation Forum 2023*, Amsterdam, The Netherlands, September 2023.
26. Bangga, G., Parkinson, S. and Collier, W., 2023. Development and Validation of the IAG Dynamic Stall Model in State-Space Representation for Wind Turbine Airfoils, *Energies*, 16(10), p.3994. https://doi.org/10.3390/en16103994
27. Bangga, G., 2023. Development and implementation of the IAG dynamic stall model in state-space formulation for wind turbine airfoils in deep stall. *Wind Energy Science Conference 2023*, Glasgow, United Kingdom.
28. Boorsma, K., Schepers, G., Aagard Madsen, H., Pirrung, G., Sørensen, N., Bangga, G., Imiela, M., Grinderslev, C., Meyer Forsting, A., Shen, W. Z., Croce, A., Cacciola, S., Schaffarczyk, A. P., Lobo, B., Blondel, F., Gilbert, P., Boisard, R., Höning, L., Greco, L., Testa, C., Branlard, E., Jonkman, J., and Vijayakumar, G., 2023. Progress in the validation of rotor aerodynamic codes using field data, *Wind Energy Science*, 8, pp. 211–230. https://doi.org/10.5194/wes-8-211-2023
29. Ralph, B., 2023. Validation and analysis of loading models for a multi-megawatt floating offshore two-bladed wind turbine. Master Thesis. Technical University of Delft. http://resolver.tudelft.nl/uuid:1a63310f-85ef-4217-81b9-cb16b1520dc7


## 2022


1. Bangga, G., Parkinson, S. and Lutz, T., 2022. Utilizing high fidelity data into engineering model calculations for accurate wind turbine performance and load assessments under design load cases. *IET Renewable Power Generation*, pp. 1-25. https://doi.org/10.1049/rpg2.12649
2. Mendoza, N., Robertson, A., Wright, A., Jonkman, J., Wang, L., Bergua, R., Ngo, T., Das, T., Odeh, M., Mohsin, K., Flavia, F.F., Child, B., Bangga, G., Fowler, M., Goupee, A., Kimball, R., Lenfest, E., Viselli, A. 2022. Verification and Validation of Model-Scale Turbine Performance and Control Strategies for the IEA Wind 15 MW Reference Wind Turbine. *Energies* 2022, 15, 7649. https://doi.org/10.3390/en15207649
3. Bergua, R., Robertson, A., Jonkman, J., Platt, A., Page, A., Qvist, J., Amet, E., Cai, Z., Han, H., Beardsell, A. and Shi, W., 2022. OC6 Phase II: Integration and verification of a new soil–structure interaction model for offshore wind design. *Wind Energy*, 25(5), pp.793-810. https://doi.org/10.1002/we.2698
4. Routray, A. and Hur, S.H., 2022, October. Predictive Control of Wind Turbine Using Preview Wind Speed Information. In *2022 IEEE Energy Conversion Congress and Exposition* (ECCE) (pp. 1-7). IEEE. https://doi.org/10.1109/ECCE50734.2022.9947738
5. Xi, R., Xu, C., Du, X., El Naggar, M.H., Wang, P., Liu, L. and Zhai, E., 2022. Framework for dynamic response analysis of monopile supported offshore wind turbine excited by combined wind-wave-earthquake loading. *Ocean Engineering*, 247, p.110743. https://doi.org/10.1016/j.oceaneng.2022.110743
6. Hart, E., de Mello, E., and Dwyer-Joyce, R. 2022. Wind turbine main-bearing lubrication – Part 2: Simulation-based results for a double-row spherical roller main bearing in a 1.5 MW wind turbine, *Wind Energy Science*, 7, 1533–1550. https://doi.org/10.5194/wes-7-1533-2022
7. Hart, E., Stock, A., Elderfield, G., Elliott, R., Brasseur, J., Keller, J., Guo, Y. and Song, W., 2022. Impacts of wind field characteristics and non-steady deterministic wind events on time-varying main-bearing loads. *Wind Energy Science*, *7*(3), pp.1209-1226. https://doi.org/10.5194/wes-7-1209-2022

8. Gutiérrez, R., Llorente, E. and Ragni, D., 2022. Induced stalled flow due to roughness sensitivity for thick airfoils in modern wind turbines. In Journal of Physics: Conference Series (Vol. 2151, No. 1, p. 012001). IOP Publishing. https://doi.org/10.1088/1742-6596/2151/1/012001
9. Bashetty, S. and Ozcelik, S., 2022. Design and Stability Analysis of an Offshore Floating Multi-Wind Turbine Platform. *Inventions*, 7(3), p.58. https://doi.org/10.3390/inventions7030058
10. Marjan, A. and Hart, P., 2022. Impact of Design Parameters on the Dynamic Response and Fatigue of Offshore Jacket Foundations. Journal of Marine Science and Engineering, 10(9), p.1320. https://doi.org/10.3390/jmse10091320
11. Zhang, Y., Macdonald, J.H., Liu, S. and Harper, P.W., 2022. Damage detection of nonlinear structures using probability density ratio estimation. *Computer-Aided Civil and Infrastructure Engineering*, 37(7), pp.878-893. https://doi.org/10.1111/mice.12772

## 2021

1. Schepers, J.G., Boorsma, K., A Madsen, H., Pirrung, G.R., Bangga, G., Guma, G., Lutz, T., Potentier, T., Braud, C., Guilmineau, E. and Croce, A., 2021. IEA Wind TCP Task 29, Phase IV: Detailed Aerodynamics of Wind Turbines. https://doi.org/10.5281/zenodo.4925963
2. Verdonck, H., Hach, O., Polman, J., Balzani, C., Braun, O., Müller, S. and Rieke, J., 2021. Code-to-code comparison of realistic wind turbine instability phenomena. *Wind Energy Science Conference*, 25.-28. May. 2021, Hannover, Germany. https://doi.org/10.5281/zenodo.5874658
3. Popko, W., Robertson, A., Jonkman, J., Wendt, F., Thomas, P., Müller, K., Kretschmer, M., Hagen, T.R., Galinos, C., Le Dreff, J.B. and Gilbert, P., 2021. Validation of numerical models of the offshore wind turbine from the alpha ventus wind farm against full-scale measurements within OC5 Phase III. *Journal of Offshore Mechanics and Arctic Engineering*, *143*(1). https://doi.org/10.1115/1.4047378
4. Anstock, F. and Schorbach, V., 2021, September. The effect of a speed exclusion zone and active tower dampers on an upwind fixed-hub two-bladed 20 MW wind turbine. In Journal of Physics: Conference Series (Vol. 2018, No. 1, p. 012003). IOP Publishing. https://doi.org/10.1088/1742-6596/2018/1/012003
5. Schütt, M., Anstock, F. and Schorbach, V., 2021, September. A procedure to redesign a comparable blade structure of a two-bladed turbine based on a three-bladed reference. In Journal of Physics: Conference Series (Vol. 2018, No. 1, p. 012035). IOP Publishing. https://doi.org/10.1088/1742-6596/2018/1/012035

## 2020

1. Boorsma, K., Wenz, F., Lindenburg, K., Aman, M. and Kloosterman, M., 2020. Validation and accommodation of vortex wake codes for wind turbine design load calculations. *Wind Energy Science*, 5(2), pp.699-719. https://doi.org/10.5194/wes-5-699-2020
2. Hach, O., Verdonck, H., Polman, J.D., Balzani, C., Müller, S., Rieke, J. and Hennings, H., 2020, September. Wind turbine stability: Comparison of state-of-the-art aeroelastic simulation tools. *In Journal of Physics: Conference Series* (Vol. 1618, No. 5, p. 052048). IOP Publishing. https://doi.org/10.1088/1742-6596/1618/5/052048
3. Bakhshandehrostami, A., Han, K.J., Parkinson, S., Alblas, L., Collier, W. and Sun, F.C., 2021, September. Verification of interface between an aeroelastic code and a time domain Rankine solver for completing structural analysis of floating wind turbine foundation design. *In Journal of Physics: Conference Series* (Vol. 2018, No. 1, p. 012007). IOP Publishing. https://doi.org/10.1088/1742-6596/2018/1/012007
4. Harrison, M., Bossanyi, E., Ruisi, R. and Skeen, N., 2020, September. An initial study into the potential of wind farm control to reduce fatigue loads and extend asset life. In *Journal of Physics: Conference Series* (Vol. 1618, No. 2, p. 022007). IOP Publishing.https://doi.org/10.1088/1742-6596/1618/2/022007
5. Choisnet, T., Percher, Y., Adam, R., Favré, M. and Harries, R., 2020, August. On the Correlation Between Floating Wind Turbine Accelerations, Rotor and Tower Loads. In *International Conference on Offshore Mechanics and Arctic Engineering* (Vol. 84416, p. V009T09A060). American Society of Mechanical Engineers. https://doi.org/10.1115/OMAE2020-18610

6. Anstock, F. and Schorbach, V., 2020, September. A control cost criterion for controller tuning of two-and three-bladed 20 MW offshore wind turbines. In Journal of Physics: Conference Series (Vol. 1618, No. 2, p. 022062). IOP Publishing. https://doi.org/10.1088/1742-6596/1618/2/022062
7. Schütt, M., Anstock, F. and Schorbach, V., 2020, September. Progressive structural scaling of a 20 MW two-bladed offshore wind turbine rotor blade examined by finite element analyses. In Journal of Physics: Conference Series (Vol. 1618, No. 5, p. 052017). IOP Publishing. https://doi.org/10.1088/1742-6596/1618/5/052017

**2019**

1. Boorsma, K., Wenz, F., Aman, M., Lindenburg, C., Kloosterman, M. and WoZ, S.T., 2019. *TKI WOZ VortexLoads final report* (No. TNO 2019 R11388). TNO. http://resolver.tudelft.nl/uuid:f4d6218a-f19c-4246-a3b0-d0ac64af7618
2. Boorsma, K., Aman, M., Lindenburg, C. and Wenz, F., 2019. *Validation of BEM and Vortex-wake models with numerical tunnel data, TKI WoZ Vortexloads WP2* (Vol. 11389). Tech. Rep. TNO 2019. https://repository.tno.nl//islandora/object/uuid:295dfb20-0d52-4f81-a19b-d3e0b5fc3e76
3. Boorsma, K., Aman, M., Lindenberg, C. and Kloosterman, M., 2019. Improvement of BEM and vortex-wake models, TKI WoZ Vortexloads WP4. http://resolver.tudelft.nl/uuid:fa934dd0-7ddf-4078-84e0-fcc3c5a1c0e8
4. Wenz, F., Boorsma, K., Bangga, G., Kim, Y. and Lutz, T., 2019. *CFD Modelling and Results of VortexLoads WP1*. Tech. rep., University of Stuttgart, Institute for Aerodynamics and Gasdynamics, Stuttgart, Germany.
5. Lindenburg, C., 2019. *Design load calculations and recommendations for the use of vortex-wake models in the standard, TKI WoZ Vortexloads WP5*. Tech. rep., LM Windpower, Heerhugowaard, the Netherlands.
6. Popko, W., Robertson, A., Jonkman, J., Wendt, F., Thomas, P., Müller, K., Kretschmer, M., Ruud Hagen, T., Galinos, C., Le Dreff, J.B. and Gilbert, P., 2019, June. Validation of numerical models of the offshore wind turbine from the alpha ventus wind farm against full-scale measurements within OC5 phase III. In *International Conference on Offshore Mechanics and Arctic Engineering* (Vol. 58899, p. V010T09A065). American Society of Mechanical Engineers. https://doi.org/10.1115/1.4047378
7. Anstock, F., Schütt, M. and Schorbach, V., 2019, October. A new approach for comparability of two-and three-bladed 20 MW offshore wind turbines. In Journal of Physics: Conference Series (Vol. 1356, No. 1, p. 012008). IOP Publishing. https://doi.org/10.1088/1742-6596/1356/1/012008

**Until 2018**

1. Beardsell, A., Alexandre, A., Child, B., Harries, R. and McCowen, D., 2018, October. Beyond OC5–Further advances in floating wind turbine modelling using Bladed. *In Journal of Physics: Conference Series* (Vol. 1102, No. 1, p. 012023). IOP Publishing. https://doi.org/10.1088/1742-6596/1102/1/012023
2. Harrison, M., Kloosterman, M. and Urbano, R.B., 2018, June. Aerodynamic modelling of wind turbine blade loads during extreme deflection events. In *Journal of Physics: Conference Series* (Vol. 1037, No. 6, p. 062022). IOP Publishing. https://doi.org/10.1088/1742-6596/1037/6/062022
3. Alexandre, A., Percher, Y., Choisnet, T., Buils Urbano, R. and Harries, R., 2018, November. Coupled analysis and numerical model verification for the 2MW Floatgen demonstrator project with IDEOL platform. In *International Conference on Offshore Mechanics and Arctic Engineering* (Vol. 51975, p. V001T01A032). American Society of Mechanical Engineers. https://doi.org/10.1115/IOWTC2018-1071
4. Alexandre, A., Urbano, R.B., Roadnight, J. and Harries, R., 2018, June. Methodology for calculating floating offshore wind foundation internal loads using bladed and a finite element analysis software. In *International Conference on Offshore Mechanics and Arctic Engineering* (Vol. 51319, p. V010T09A084). American Society of Mechanical Engineers. https://doi.org/10.1115/OMAE2018-78035
5. Robertson, A.N., Wendt, F., Jonkman, J.M., Popko, W., Dagher, H., Gueydon, S., Qvist, J., Vittori, F., Azcona, J., Uzunoglu, E. and Soares, C.G., 2017. OC5 project phase II: validation of global loads of the DeepCwind floating semisubmersible wind turbine. *Energy Procedia*, *137*, pp.38-57. https://doi.org/10.1016/j.egypro.2017.10.333

6. Collier, W. and Alblas, L., 2018. Reducing cost in jacket design: comparing the integrated and superelement approach. In *Proceedings of 3rd International Conference on Offshore Renewable-energy* (pp. 1-11). https://www.dnv.com/Images/Reducing-cost-in-jacket-design-Comparing-the-integrated-and-superelement-approach_tcm8-149174.pdf
7. Robertson, A.N., Wendt, F., Jonkman, J.M., Popko, W., Borg, M., Bredmose, H., Schlutter, F., Qvist, J., Bergua, R., Harries, R. and Yde, A., 2016. OC5 Project Phase Ib: Validation of hydrodynamic loading on a fixed, flexible cylinder for offshore wind applications. *Energy Procedia*, *94*, pp.82-101. https://doi.org/10.1016/j.egypro.2016.09.201
8. Parkinson, S.G. and Collier, W.J., 2016. Model validation of hydrodynamic loads and performance of a full-scale tidal turbine using Tidal Bladed. *International Journal of Marine Energy*, 16, pp.279-297. https://doi.org/10.1016/j.ijome.2016.08.001
9. Beardsell, A., Collier, W. and Han, T., 2016, September. Effect of linear and non-linear blade modelling techniques on simulated fatigue and extreme loads using Bladed. In *Journal of Physics: Conference Series* (Vol. 753, No. 4, p. 042002). IOP Publishing. https://doi.org/10.1088/1742-6596/753/4/042002
10. Collier, W. and Sanz, J.M., 2016, September. Comparison of linear and non-linear blade model predictions in Bladed to measurement data from GE 6MW wind turbine. In *Journal of Physics: Conference Series* (Vol. 753, No. 8, p. 082004). IOP Publishing. https://doi.org/10.1088/1742-6596/753/8/082004
11. Vita, L., Ramachandran, G.K.V., Krieger, A., Kvittem, M.I., Merino, D., Cross-Whiter, J. and Ackers, B.B., 2015, May. Comparison of numerical models and verification against experimental data, using Pelastar TLP concept. In *International Conference on Offshore Mechanics and Arctic Engineering* (Vol. 56574, p. V009T09A047). American Society of Mechanical Engineers. https://doi.org/10.1115/OMAE2015-41874
12. Collier, W., Bradstock, P., Ravn, M. and Andersen, C., 2015. Non-linear blade model in Bladed for prediction of deflection of large wind turbine blades, and comparison to HAWC2. *In EWEA 2015 Conference*.
13. An Advanced Tool to Analyse Flutter Onset Including Non-linear Blade Deflections, May 2015, *AWEA Offshore Windpower*.
14. Integrated Modelling and Loads Analysis of the Keystone IBGS for the VOWTAP Project, September 2015, *AWEA Offshore Windpower*.
15. Verification of Bladed against SACS for use in Integrated Offshore Support Structure Design - October 2014, *AWEA Offshore Windpower*.
16. Vita, L., Ramachandran, G.K.V., Krieger, A., Kvittem, M.I., Merino, D., Cross-Whiter, J. and Ackers, B.B., 2015, May. Comparison of numerical models and verification against experimental data, using Pelastar TLP concept. *In International Conference on Offshore Mechanics and Arctic Engineering* (Vol. 56574, p. V009T09A047). American Society of Mechanical Engineers. https://doi.org/10.1115/OMAE2015-41874
17. Alexandre, A, Harries, R., Evaluating Corrections to Linear Boundary Element Method Hydrodynamics Accounting for Mean Second Order Forces on Spar Buoy Wind Turbine Support Structures, RENEW, Nov 2014
18. Schorbach, V., Dalhoff, P. and Gust, P., 2018. Teeter design for lowest extreme loads during end impacts. Wind Energy, 21(1), pp.1-14. https://doi.org/10.1002/we.2140
19. Schorbach, V., Dalhoff, P. and Gust, P., 2014, June. Taming the inevitable: significant parameters of teeter end impacts. In Journal of physics: Conference series (Vol. 524, No. 1, p. 012070). IOP Publishing. https://doi.org/10.1088/1742-6596/524/1/012070