List of Publications

David Schlipf

February 21, 2025

Dissertation

[1] D. Schlipf. "Lidar-Assisted Control Concepts for Wind Turbines". PhD thesis. University of Stuttgart, 2015. DOI: 10.18419/opus-8796.

Book Chapters

[1] J.-W. Van Wingerden, D. Schlipf, and P. Gebraad. "Long-term Research Challenges in Wind Energy - A Research Agenda by the European Academy of Wind Energy". In: ed. by G. van Kuik and J. Peinke. Springer International Publishing, Sept. 2016. Chap. Control, pp. 27–33. ISBN: 978-3-319-46919-5. DOI: 10.1007/978-3-319-46919-5.

Publications in Journals

[26] F. Guo, Z. Gao, and D. Schlipf. "TorqTwin—An open-source reference multibody modeling framework for wind turbine structural dynamics". In: *Renewable Energy* 235 (2024), p. 121268. ISSN: 0960-1481. DOI: 10.1016/j.renene.2024.121268.

[25] W. Fu, F. Guo, D. Schlipf, and A. Peña. "Feedforward pitch control for a 15 MW wind turbine using a spinner-mounted single-beam lidar". In: *Wind Energy Science* 8.12 (2023), pp. 1893–1907. DOI: 10.5194/wes-8-1893-2023.

[24] F. Guo and D. Schlipf. "Assessing lidar-assisted feedforward and multivariable feedback controls for large floating wind turbines". In: *Wind Energy Science* 8.8 (2023), pp. 1299–1317. DOI: 10.5194/wes-8-1299-2023.

[23] F. Guo, D. Schlipf, and P. W. Cheng. "Evaluation of lidar-assisted wind turbine control under various turbulence characteristics". In: *Wind Energy Science* 8.2 (2023), pp. 149–171. DOI: 10.5194/wes-8-149-2023.

[22] F. Guo, J. Mann, A. Peña, D. Schlipf, and P. W. Cheng. "The space-time structure of turbulence for lidar-assisted wind turbine control". In: *Renewable Energy* 195 (2022), pp. 293–310. DOI: 10.1016/j.renene.2022.05.133.

[21] Y. Chen, F. Guo, D. Schlipf, and P. W. Cheng. "Four-dimensional wind field generation for the aeroelastic simulation of wind turbines with lidars". In: *Wind Energy Science* 7.2 (Mar. 2022), pp. 539–558. DOI: 10.5194/wes-7-539-2022.

[20] Y. Chen, D. Schlipf, and P. W. Cheng. "Parameterization of wind evolution using lidar". In: *Wind Energy Science* 6.1 (Jan. 2021), pp. 61–91. DOI: 10.5194/wes-6-61-2021.

[19] F. Guo and D. Schlipf. "A Spectral Model of Grid Frequency for Assessing the Impact of Inertia Response on Wind Turbine Dynamics". In: *Energies* 14.9 (Apr. 2021). DOI: 10.3390/en14092492.

[18] F. Lemmer, W. Yu, D. Schlipf, and P. W. Cheng. "Robust gain scheduling baseline controller for floating offshore wind turbines". In: *Wind Energy* 23.1 (Jan. 2020), pp. 17–30. DOI: 10.1002/we.2408.

[17] P. A. Fleming, A. Peiffer, and D. Schlipf. "Wind turbine controller to mitigate structural loads on a floating wind turbine platform". In: *Journal of Offshore Mechanics and Arctic Engineering* 141.6 (Mar. 2019). DOI: 10.1115/1.4042938.

[16] I. Würth, L. Valldecabres, E. Simon, C. Möhrlen, B. Uzunoğlu, C. Gilbert, G. Giebel, D. Schlipf, and A. Kaifel. "Minute-scale forecasting of wind power results from the collaborative workshop of IEA wind task 32 and 36". In: *Energies* 12.4 (Feb. 2019), p. 712. DOI: 10.3390/en12040712.

[15] J. Annoni, P. Fleming, A. Scholbrock, J. Roadman, S. Dana, C. Adcock, F. Porte-Agel, S. Raach, F. Haizmann, and D. Schlipf. "Analysis of control-oriented wake modeling tools using lidar field results". In: *Wind Energy Science* 3.2 (Nov. 2018), pp. 819–831. DOI: 10.5194/wes-3-819-2018.

[14] E. Simley, H. Fürst, F. Haizmann, and D. Schlipf. "Optimizing lidars for wind turbine control applications results from the IEA wind task 32 workshop". In: *Remote Sensing* 10.6 (June 2018), p. 863. DOI: 10.3390/rs10060863.

[13] A. Clifton, P. Clive, J. Gottschall, D. Schlipf, E. Simley, L. Simmons, D. Stein, D. Trabucchi, N. Vasiljevic, and I. Würth. "IEA wind task 32: wind lidar identifying and mitigating barriers to the adoption of wind lidar". In: *Remote Sensing* 10.3 (Mar. 2018), p. 406. DOI: 10.3390/rs10030406.

[12] A. Borraccino, D. Schlipf, F. Haizmann, and R. Wagner. "Wind field reconstruction from nacelle-mounted lidar short-range measurements". In: *Wind Energy Science* 2.1 (May 2017), pp. 269–283. DOI: 10.5194/wes-2-269-2017.

[11] S. Raach, D. Schlipf, and P. W. Cheng. "Lidar-based wake tracking for closed-loop wind farm control". In: *Wind Energy Science* 2.1 (May 2017), pp. 257–267. DOI: 10.5194/wes-2-257-2017.

[10] J. J. Trujillo, J. K. Seifert, I. Würth, D. Schlipf, and M. Kühn. "Full-field assessment of wind turbine near-wake deviation in relation to yaw misalignment". In: *Wind Energy Science* 1.1 (Apr. 2016), pp. 41–53. DOI: 10.5194/wes-1-41-2016.

[9] G. A. M. Van Kuik, J. Peinke, R. Nijssen, D. Lekou, J. Mann, J. N. Sørensen, C. Ferreira, J. W. Van Wingerden, D. Schlipf, P. Gebraad, H. Polinder, A. Abrahamsen, G. J. W. Van Bussel, J. D. Sørensen, P. Tavner, C. L. Bottasso, M. Muskulus, D. Matha, H. J. Lindeboom, S. Degraer, O. Kramer, S. Lehnhoff, M. Sonnenschein, P. E. Sørensen, R. W. Künneke, P. E. Morthorst, and K. Skytte. "Long-term research challenges in wind energy – a research agenda by the european academy of wind energy". In: *Wind Energy Science* 1.1 (Feb. 2016), pp. 1–39. DOI: 10.5194/wes-1-1-2016.

[8] D. Schlipf, E. Simley, F. Lemmer, L. Pao, and P. W. Cheng. "Collective pitch feedforward control of floating wind turbines using Lidar". In: *Journal of Ocean and Wind Energy* 2.4 (Nov. 2015), pp. 223–230. DOI: 10.17736/jowe.2015.arr04.

[7] D. Schlipf, F. Haizmann, N. Cosack, T. Siebers, and P. W. Cheng. "Detection of wind evolution and lidar trajectory optimization for lidar-assisted wind turbine control". In: *Meteorologische Zeitschrift* 24.6 (Nov. 2015), pp. 565–579. DOI: 10.1127/metz/2015/0634.

[6] A. Rettenmeier, D. Schlipf, I. Würth, and P. W. Cheng. "Power performance measurements of the NREL CART-2 wind turbine using a nacelle-based lidar scanner". In: *Journal of Atmospheric and Oceanic Technology* 31.10 (Oct. 2014), pp. 2029–2034. DOI: 10.1175/jtech-d-13-00154.1.

[5] D. Schlipf, D. J. Schlipf, and M. Kühn. "Nonlinear model predictive control of wind turbines using LIDAR". in: *Wind Energy* 16.7 (Oct. 2013), pp. 1107–1129. DOI: 10.1002/we.1533.

[4] D. Schlipf, J. Mann, and P. W. Cheng. "Model of the correlation between lidar systems and wind turbines for lidar-assisted control". In: *Journal of Atmospheric and Oceanic Technology* 30.10 (Oct. 2013), pp. 2233–2240. DOI: 10.1175/jtech-d-13-00077.1.

[3] S. Schuler, D. Schlipf, P. W. Cheng, and F. Allgöwer. "ℓ_1- optimal control of large wind turbines". In: *IEEE Transactions on Control Systems Technology* 21.4 (July 2013), pp. 1079–1089. DOI: 10.1109/tcst.2013.2261068.

[2] D. Schlipf and P. W. Cheng. "Adaptive feedforward control for wind turbines". In: *at - Automatisierungstechnik* 61.5 (May 2013), pp. 329–338. DOI: 10.1524/auto.2013.0029.

[1] E. Bossanyi, B. Savini, M. Iribas, M. Hau, B. Fischer, D. Schlipf, T. van Engelen, M. Rossetti, and C. E. Carcangiu. "Advanced controller research for multi-MW wind turbines in the UpWind project". In: *Wind Energy* 15.1 (Jan. 2012), pp. 119–145. DOI: 10.1002/we.523.

Publications in Peer Reviewed Conference Proceedings

[57] A. Garcia-Sagrado, D. Schlipf, S. P. Brovia, J. Burstein, and T. Yoshinaga. "Impact of motions on floating wind turbine power production". In: *Journal of Physics: Conference Series*. The Science of Making Torque from Wind (TORQUE 2024). May 2024. DOI: 10.1088/1742-6596/2767/6/062034

[56] F. Guo, D. Schlipf, F. Lemmer, S. Raach, U. Özinan, R. Adam, and T. Choisnet. "The performance of two control strategies for floating wind turbines: lidar-assisted feedforward and multi-variable feedback". In: *Journal of Physics: Conference Series*. Vol. 2626. 1. EERA DeepWind conference 2023. Oct. 2023, p. 012005. DOI: 10.1088/1742-6596/2626/1/012005

[55] D. Schlipf, F. Guo, S. Raach, and F. Lemmer. "A Tutorial on Lidar-Assisted Control for Floating Offshore Wind Turbines". In: *American Control Conference*. San Diego, CA, USA, May 2023. DOI: 10.23919/ACC55779.2023.10156419.

[54] C. S. Eissing, A. Richter, and D. Schlipf. "CPACS LTA—Using Common Data Structures for Visualization and Optimization of Airship Designs". In: *Lighter Than Air Systems*. Ed. by D. Shukla. Singapore: Springer Nature Singapore, 2023, pp. 25–36. DOI: 10.1007/978-981-19-6049-9_2.

[53] F. Guo, D. Schlipf, Z. Zhang, and P. W. Cheng. "Investigation on the wind preview quality for lidar-assisted wind turbine control under wake conditions". In: *American Control Conference*. Atlanta, GA, USA, June 2022. DOI: 10.23919/ACC53348.2022.9867301.

[52] F. Guo, D. Schlipf, H. Zhu, A. Platt, P. W. Cheng, and F. Thomas. "Updates on the OpenFAST Lidar Simulator". In: *Journal of Physics: Conference Series*. Vol. 2265. 4. The Science of Making Torque from Wind (TORQUE 2022). May 2022, p. 042030. DOI: 10.1088/1742-6596/2265/4/042030.

[51] I. Miquelez-Madariaga, D. Schlipf, J. Elso, F. Guo, and A. D. de Corcuera. "LIDAR based multivariable $\mathscr{H}_\infty$ feedforward control for load reduction in wind turbines". In: *Journal of Physics: Conference Series*. Vol. 2265. 2. The Science of Making Torque from Wind (TORQUE 2022). May 2022, p. 022070. DOI: 10.1088/1742-6596/2265/2/022070.

[50] H. Steinacker, F. Lemmer, S. Raach, D. Schlipf, and P. W. Cheng. "Efficient multibody modeling of offshore wind turbines with flexible substructures". In: *Journal of Physics: Conference Series*. Vol. 2265. 4. The Science of Making Torque from Wind (TORQUE 2022). May 2022, p. 042007. DOI: 10.1088/1742-6596/2265/4/042007.

[49] F. Guo and D. Schlipf. "Lidar Wind Preview Quality Estimation for Wind Turbine Control". In: *American Control Conference*. New Orleans, LA, USA, May 2021. DOI: 10.23919/ACC50511.2021.9483442.

[48] D. Schlipf, F. Lemmer, and S. Raach. "Multi-Variable Feedforward Control for Floating Wind Turbines Using Lidar". In: *International Ocean and Polar Engineering Conference*. Oct. 2020. DOI: 10.18419/opus-11067. URL: https://onepetro.org/ISOPEIOPEC/proceedings-abstract/ISOPE20/All-ISOPE20/ISOPE-I-20-1174/446367.

[47] D. Schlipf, F. Guo, and S. Raach. "Lidar-based Estimation of Turbulence Intensity for Controller Scheduling". In: *Journal of Physics: Conference Series*. Vol. 1618. 3. The Science of Making Torque from Wind (TORQUE 2020). Sept. 2020, p. 032053. DOI: 10.1088/1742-6596/1618/3/032053.

[46] E. Simley, P. Bortolotti, A. Scholbrock, D. Schlipf, and K. Dykes. "IEA Wind Task 32 and Task 37: Optimizing Wind Turbines with Lidar-Assisted Control Using Systems Engineering". In: *Journal of Physics: Conference Series*. Vol. 1618. 4. The Science of Making Torque from Wind (TORQUE 2020). Sept. 2020, p. 042029. DOI: 10.1088/1742-6596/1618/4/042029.

[45] W. Yu, F. Lemmer, D. Schlipf, and P. W. Cheng. "Loop shaping based robust control for floating offshore wind turbines". In: *Journal of Physics: Conference Series*. Vol. 1618. 2. The Science of Making Torque from Wind (TORQUE 2020). Sept. 2020, p. 022066. DOI: 10.1088/1742-6596/1618/2/022066.

[44] D. Schlipf, M. Koch, and S. Raach. "Modeling Uncertainties of Wind Field Reconstruction Using Lidar". In: *Journal of Physics: Conference Series*. Vol. 1452. NAWEA WindTech 2019. Mar. 2020, p. 012088. DOI: 10.1088/1742-6596/1452/1/012088.

[43] D. Schlipf, H. Fürst, S. Raach, and F. Haizmann. "Systems engineering for lidar-assisted control: a sequential approach". In: *Journal of Physics: Conference Series*. Vol. 1102. WindEurope conference 2018 within the Global Wind Summit. Hamburg, Germany, Sept. 2018, p. 012014. DOI: 10.1088/1742-6596/1102/1/012014.

[42] D. Schlipf, N. Hille, S. Raach, A. Scholbrock, and E. Simley. "IEA wind task 32: best practices for the certification of lidar-assisted control applications". In: *Journal of Physics: Conference Series*. Vol. 1102. WindEurope conference 2018 within the Global Wind Summit. Hamburg, Germany, Sept. 2018, p. 012010. DOI: 10.1088/1742-6596/1102/1/012010.

[41] M. Salari Khaniki, D. Schlipf, and P. W. Cheng. "A comparison between LIDAR-based feedforward and DAC for control of wind turbines". In: *IEEE Conference on Control Technology and Applications*. Copenhagen, Denmark, Aug. 2018. DOI: 10.1109/ccta.2018.8511422.

[40] M. Salari Khaniki, D. Schlipf, V. Pettas, and P. W. Cheng. "Control design for disturbance rejection in wind turbines". In: *American Control Conference*. Milwaukee, WI, USA, June 2018. DOI: 10.23919/acc.2018.8431637.

[39] V. Pettas, M. Salari, D. Schlipf, and P. W. Cheng. "Investigation on the potential of individual blade control for lifetime extension". In: *Journal of Physics: Conference Series*. Vol. 1037. The Science of making torque from wind (Torque 2018). Milano, Italy, May 2018, p. 032006. DOI: 10.1088/1742-6596/1037/3/032006.

[38] F. Haizmann, D. Schlipf, and P. W. Cheng. "Lidar-assisted extreme load reduction by multi-variable protective derating". In: *Journal of Physics: Conference Series*. Vol. 1037. The Science of making torque from wind (Torque 2018). Milano, Italy, May 2018, p. 032025. DOI: 10.1088/1742-6596/1037/3/032025.

[37] W. Yu, F. Lemmer, D. Schlipf, P. W. Cheng, B. Visser, H. Links, N. Gupta, S. Dankemann, B. Counago, and J. Serna. "Evaluation of control methods for floating offshore wind turbines". In: *Journal of Physics: Conference Series*. Vol. 1104. 15th Deep Sea Offshore Wind R&D Conference, EERA DeepWind'2018. Trondheim, Norway, Jan. 2018, p. 012033. DOI: 10.1088/1742-6596/1104/1/012033.

[36] S. Raach, S. Boersma, J.-W. van Wingerden, D. Schlipf, and P. W. Cheng. "Robust controller design for lidar-based closed-loop wake redirection for wind farm control". In: *World Congress of the International Federation of Automatic Control*. Vol. 50. 1. Toulouse, France, July 2017, pp. 4498–4503. DOI: 10.1016/j.ifacol.2017.08.380.

[35] F. Lemmer, K. Müller, W. Yu, D. Schlipf, and P. W. Cheng. "Optimization of floating offshore wind turbine platforms with a self-tuning controller". In: *International Conference on Ocean, Offshore and Arctic Engineering*. Trondheim, Norway, June 2017. DOI: 10.1115/omae2017-62038. URL: http://dx.doi.org/10.18419/opus-9174.

[34] P. Fleming, J. Annoni, A. Scholbrock, E. Quon, S. Dana, S. Schreck, S. Raach, F. Haizmann, and D. Schlipf. "Full-scale field test of wake steering". In: *Journal of Physics: Conference Series*. Vol. 854. Wake Conference. Visby, Sweden, May 2017, p. 012013. DOI: 10.1088/1742-6596/854/1/012013.

[33] S. Raach, J.-W. Van Wingerden, S. Boersma, D. Schlipf, and P. W. Cheng. "$\mathscr{H}_\infty$ controller design for closed-loop wake redirection". In: *American Control Conference*. Seatle, WA, USA, May 2017, pp. 703–708. DOI: 10.23919/ACC.2017.7963035.

[32] W. Yu, F. Lemmer, H. Bredmose, M. Borg, A. P. Jurado, R. F. Mikkelsen, T. S. Larsen, T. Fjelstrup, A. K. Lomholt, L. Boehm, D. Schlipf, J. Azcona Armendariz, and P. W. Cheng. "The triple spar campaign: implementation and test of a blade pitch controller on a scaled floating wind turbine model". In: *Energy Procedia*. Vol. 137. 14th Deep Sea Offshore Wind R&D Conference, EERA DeepWind'2017. Trondheim, Norway, Oct. 2017, pp. 323–338. DOI: 10.1016/j.egypro.2017.10.357.

[31] D. Schlipf and S. Raach. "Turbulent extreme event simulations for Lidar-assisted wind turbine control". In: *Journal of Physics: Conference Series*. Vol. 753. The Science of making torque from wind (Torque 2016). Munich, Germany, Sept. 2016, p. 052011. DOI: 10.1088/1742-6596/753/5/052011.

[30] F. Lemmer, D. Schlipf, and P. W. Cheng. "Control design methods for floating wind turbines for optimal disturbance rejection". In: *Journal of Physics: Conference Series*. Vol. 753. The Science of making torque from wind (Torque 2016). Munich, Germany, Sept. 2016, p. 092006. DOI: 10.1088/1742-6596/753/9/092006.

[29] S. Raach, D. Schlipf, and P. W. Cheng. "Lidar-based wake tracking for closed-loop wind farm control". In: *Journal of Physics: Conference Series*. Vol. 753. The Science of making torque from wind (Torque 2016). Munich, Germany, Sept. 2016, p. 052009. DOI: 10.1088/1742-6596/753/5/052009.

[28] F. Lemmer, S. Raach, D. Schlipf, and P. W. Cheng. "Parametric wave excitation model for floating wind turbines". In: *Energy Procedia*. Vol. 94. 13th Deep Sea Offshore Wind R&D Conference, EERA DeepWind'2016. Trondheim, Norway, Sept. 2016, pp. 290–305. DOI: 10.1016/j.egypro.2016.09.186.

[27] D. Schlipf. "Prospects of multivariable feedforward control of wind turbines using lidar". In: *American Control Conference*. Boston, MA, USA, July 2016. DOI: 10.1109/acc.2016.7525112. URL: http://dx.doi.org/10.18419/opus-8818.

[26] A. Scholbrock, P. Fleming, D. Schlipf, A. Wright, K. Johnson, and N. Wang. "Lidar-enhanced wind turbine control: past, present, and future". In: *American Control Conference*. Boston, MA, USA, July 2016. DOI: 10.1109/acc.2016.7525113. URL: https://www.nrel.gov/docs/fy16osti/65879.pdf.

[25] S. Raach, D. Schlipf, F. Borisade, and P. W. Cheng. "Wake redirecting using feedback control to improve the power output of wind farms". In: *American Control Conference*. Boston, MA, USA, July 2016. DOI: 10.1109/acc.2016.7525111. URL: http://dx.doi.org/10.18419/opus-8811.

[24] P. A. Fleming, A. Peiffer, and D. Schlipf. "Wind turbine controller to mitigate structural loads on a floating wind turbine platform". In: *International Conference on Offshore Mechanics and Arctic Engineering*. Vol. 6. Busan, South Korea, June 2016. DOI: 10.1115/omae2016-54536.

[23] D. Schlipf, P. Fleming, S. Raach, A. K. Scholbrock, F. Haizmann, R. Krishnamurthy, M. Boquet, and P. W. Cheng. "An adaptive data processing technique for LIDAR-assisted control to bridge the gap between LIDAR systems and wind turbines". In: *European Wind Energy Association Annual Event*. Scientific Track. Paris, France, Nov. 2015. DOI: 10.18419/opus-8419.

[22] H. Fürst, D. Schlipf, M. Iribas Latour, and P. W. Cheng. "Design and evaluation of a lidar-based feedforward controller for the INNWIND.EU 10 MW wind turbine". In: *European Wind Energy Assosiation Annual Event*. Scientific Track. Paris, France, Nov. 2015. DOI: 10.18419/opus-8418.

[21] E. Tofighi, D. Schlipf, and C. M. Kellett. "Nonlinear model predictive controller design for extreme load mitigation in transition operation region in wind turbines". In: *IEEE Conference on Control Applications*. Sydney, Australia, Sept. 2015. DOI: 10.1109/cca.2015.7320770.

[20] D. Schlipf, E. Simley, F. Lemmer, L. Pao, and P. W. Cheng. "Collective pitch feedforward control of floating wind turbines using Lidar". In: *International Offshore and Polar Engineering*. Kona, HI, USA, July 2015. DOI: 10.18419/opus-3974. URL: https://onepetro.org/ISOPEIOPEC/proceedings-abstract/ISOPE15/All-ISOPE15/ISOPE-I-15-755/15111.

[19] F. Lemmer, S. Raach, D. Schlipf, and P. W. Cheng. "Prospects of linear model predictive controlon a 10 MW floating wind turbine". In: *International Conference on Ocean, Offshore and Arctic Engineering*. St. John's, Canada, June 2015. DOI: 10.1115/OMAE2015-42267. URL: http://dx.doi.org/10.18419/opus-3959.

[18] F. Haizmann, D. Schlipf, S. Raach, A. Scholbrock, A. Wright, C. Slinger, J. Medley, M. Harris, E. Bossanyi, and P. W. Cheng. "Optimization of a feed-forward controller using a CW-lidar system on the CART3". In: *American Control Conference*. Chicago, IL, USA, June 2015. DOI: 10.1109/acc.2015.7171907. URL: http://dx.doi.org/10.18419/opus-3975.

[17] D. Schlipf, P. Fleming, F. Haizmann, A. Scholbrock, M. Hofsäß, A. Wright, and P. W. Cheng. "Field testing of feedforward collective pitch control on the CART2 using a nacelle-based LIDAR scanner". In: *Journal of Physics: Conference Series*. Vol. 555. 012090. The Science of making torque from wind (Torque 2012). Oldenburg, Germany, Oct. 2014. DOI: 10.1088/1742-6596/555/1/012090.

[16] D. Matha, F. Sandner, and D. Schlipf. "Efficient critical design load case identification for floating offshore wind turbines with a reduced nonlinear model". In: *Journal of Physics: Conference Series*. Vol. 555. 012069. The Science of making torque from wind (Torque 2012). Oldenburg, Germany, Oct. 2014. DOI: 10.1088/1742-6596/555/1/012069.

[15] D. Schlipf and P. W. Cheng. "Flatness-based feedforward control of wind turbines using lidar". In: *World Congress of the International Federation of Automatic Control*. Vol. 47. 3. Cape Town, South Africa, Aug. 2014, pp. 5820–5825. DOI: 10.3182/20140824-6-za-1003.00443.

[14] F. Sandner, D. Schlipf, D. Matha, and P. W. Cheng. "Integrated optimization of floating wind turbine systems". In: *International Conference on Ocean, Offshore and Arctic Engineering*. Vol. 9B. San Francisco, CA, USA, June 2014. DOI: 10.1115/omae2014-24244. URL: http://dx.doi.org/10.18419/opus-3937.

[13] D. Schlipf, P. Grau, S. Raach, R. Duraiski, J. Trierweiler, and P. W. Cheng. "Comparison of linear and nonlinear model predictive control of wind turbines using LIDAR". in: *American Control Conference*. Portland, OR, USA, June 2014. DOI: 10.1109/acc.2014.6859205. URL: http://dx.doi.org/10.18419/opus-8173.

[12] S. Raach, D. Schlipf, F. Sandner, D. Matha, and P. W. Cheng. "Nonlinear model predictive control of floating wind turbines with individual pitch control". In: *American Control Conference*. Portland, OR, USA, June 2014. DOI: 10.1109/acc.2014.6858718. URL: http://dx.doi.org/10.18419/opus-3940.

[11] F. Dunne, L. Y. Pao, D. Schlipf, and A. K. Scholbrock. "Importance of LIDAR measurement timing accuracy for wind turbine control". In: *American Control Conference*. Portland, OR, USA, June 2014. DOI: 10.1109/acc.2014.6859337.

[10] S. Raach, D. Schlipf, F. Haizmann, and P. W. Cheng. "Three dimensional dynamic model based wind field reconstruction from LIDAR data". In: *Journal of Physics: Conference Series*. Vol. 524. 012005. The Science of making torque from wind (Torque 2014). Copenhagen, Denmark, May 2014. DOI: 10.1088/1742-6596/524/1/012005.

[9] D. Schlipf, F. Sandner, S. Raach, D. Matha, and P. W. Cheng. "Nonlinear model predictive control of floating wind turbines". In: *23rd International Ocean and Polar Engineering Conference*. Anchorage, AK, USA, July 2013, pp. 440–447. DOI: 10.18419/opus-3908.

[8] D. Schlipf, P. Fleming, S. Kapp, A. Scholbrock, F. Haizmann, F. Belen, A. Wright, and P. W. Cheng. "Direct speed control using LIDAR and turbine data". In: *American Control Conference*. Washington, DC, USA, June 2013, pp. 2208–2213. DOI: 10.1109/acc.2013.6580163. URL: http://dx.doi.org/10.18419/opus-3906.

[7] A. Scholbrock, P. Fleming, L. Fingersh, A. Wright, D. Schlipf, F. Haizmann, and F. Belen. "Field testing LIDAR based feedforward controls on the NREL controls advanced research turbine". In: *51st AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition*. Grapevine, TX, USA, Jan. 2013. DOI: 10.2514/6.2013-818. URL: https://www.nrel.gov/docs/fy13osti/57339.pdf.

[6] D. Schlipf, L. Y. Pao, and P. W. Cheng. "Comparison of feedforward and model predictive control of wind turbines using LIDAR". in: *51st IEEE Conference on Decision and Control (CDC)*. Maui, HI, USA, Dec. 2012, pp. 3050–3055. DOI: 10.1109/cdc.2012.6426063. URL: http://dx.doi.org/10.18419/opus-3905.

[5] F. Dunne, D. Schlipf, L. Y. Pao, A. D. Wright, B. Jonkman, N. Kelley, and E. Simley. "Comparison of two independent lidar-based pitch control designs". In: *50th AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition*. Nashville, TN, USA, Jan. 2012. DOI: 10.2514/6.2012-1151.

[4] D. Schlipf, S. Schuler, P. Grau, F. Allgöwer, and M. Kühn. "Look-ahead cyclic pitch control using LIDAR". in: *The Science of Making Torque from Wind (TORQUE 2010)*. Heraklion, Greece, June 2010. DOI: 10.18419/opus-4538.

[3] S. Schuler, D. Schlipf, M. Kühn, and F. Allgöwer. "ℓ_1- optimal multivariable pitch control for load reduction on large wind turbines". In: *European Wind Energy Conference*. Scientific track. Warsaw, Poland, Apr. 2010. URL: http://proceedings.ewea.org/ewec2010/allfiles2/94_EWEC2010presentation.pdf.

[2] J. J. Trujillo, A. Rettenmeier, and D. Schlipf. "Arrangements for enhanced measurements of a large turbine near-wake using LiDAR from the nacelle". In: *IOP Conference Series: Earth and Environmental Science*. Vol. 1. 012060. 14th International Symposium for the Advancement of Boundary Layer Remote Sensing. Apr. 2008. DOI: 10.1088/1755-1315/1/1/012060.

[1] P. Bolognese Fernandes, D. Schlipf, and J. O. Trierweiler. "Modeling and identification of nonlinear systems using SISO LEM-Hammerstein and LEM-Wiener model structures". In: *6th IFAC Symposium on Advanced Control of Chemical Processes*. Vol. 39. 2. Apr. 2006, pp. 1101–1106. DOI: 10.3182/20060402-4-br-2902.01101.

Publications in Other Conference Proceedings

[17] T. Hagemann, F. Haizmann, D. Schlipf, and P. W. Cheng. "Realistic simulations of extreme load cases with lidar-based feedforward control". In: *German Wind Energy Conference*. Bremen, Germany, Oct. 2017. DOI: 10.18419/opus-9333.

[16] F. Haizmann, D. Schlipf, and P. W. Cheng. "Correlation-model of rotor-effective wind shears and wind speed for lidar-based individual pitch control". In: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, May 2015. DOI: 10.18419/opus-3976.

[15] D. Schlipf, A. Rettenmeier, F. Haizmann, M. Hofsäß, M. Courtney, and P. W. Cheng. "Model based wind vector field reconstruction from lidar data". In: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, Nov. 2012. DOI: 10.18419/opus-8136.

[14] F. Sandner, D. Schlipf, D. Matha, R. Seifried, and P. W. Cheng. "Reduced nonlinear model of a spar-mounted floating wind turbine". In: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, Nov. 2012. DOI: 10.18419/opus-4528.

[13] I. Würth, A. Rettenmeier, D. Schlipf, P. W. Cheng, M. Wächter, P. Rinn, and J. Peinke. "Determination of stationary and dynamical power curves using a nacelle-based lidar system". In: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, Nov. 2012. DOI: 10.18419/opus-8137.

[12] A. Rettenmeier, J. Anger, O. Bischoff, M. Hofsäß, D. Schlipf, and I. Würth. "Nacelle-based LIDAR systems". In: *Summer School in Remote Sensing for Wind Energy*. Boulder, CO, USA, June 2012. URL: http://breeze.colorado.edu/ftp/RSWE/Andreas_Rettenmeier.pdf.

[11] D. Schlipf. "Lidar Assisted Control of Wind Turbines". In: *Summer School in Remote Sensing for Wind Energy*. Boulder, CO, USA, June 2012. URL: http://breeze.colorado.edu/ftp/RSWE/David_Schlipf.pdf.

[10] D. Schlipf, S. Kapp, J. Anger, O. Bischoff, M. Hofsäß, A. Rettenmeier, U. Smolka, and M. Kühn. "Prospects of optimization of energy production by LIDAR assisted control of wind turbines". In: *European Wind Energy Association Annual Event*. Brussels, Belgium, Mar. 2011. DOI: 10.18419/opus-3916.

[9] D. Schlipf, T. Fischer, C. E. Carcangiu, M. Rossetti, and E. Bossanyi. "Load analysis of look-ahead collective pitch control using LIDAR". in: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, Nov. 2010. DOI: 10.18419/opus-3902.

[8] O. Bischoff, M. Hofsäß, A. Rettenmeier, D. Schlipf, and B. Siegmeier. "Statistical load estimation using a nacelle-based lidar system". In: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, Nov. 2010. DOI: 10.18419/opus-8730.

[7] J. J. Trujillo, O. Bischoff, M. Hofsäß, A. Rettenmeier, D. Schlipf, and M. Kühn. "Validation of a dynamic meandering model with near wake lidar measurements". In: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, Nov. 2010. URL: http://oops.uni-oldenburg.de/1834/.

[6] D. Schlipf, D. Trabucchi, O. Bischoff, M. Hofsäß, J. Mann, T. Mikkelsen, A. Rettenmeier, J. J. Trujillo, and M. Kühn. "Testing of frozen turbulence hypothesis for wind turbine applications with a scanning LIDAR system". In: *International Symposium for the Advancement of Boundary Layer Remote Sensing*. Paris, France, June 2010. DOI: 10.18419/opus-3915.

[5] M. Sjöholm, T. Mikkelsen, L. Kristensen, J. Mann, P. Kirkegaard, S. Kapp, D. Schlipf, and J. J. Trujillo. "Spectral analysis of wind turbulence measured by a doppler lidar for velocity fine structure and coherence studies". In: *International Symposium for the Advancement of Boundary Layer Remote Sensing*. Paris, France, June 2010. URL: https://orbit.dtu.dk/en/publications/spectral-analysis-of-wind-turbulence-measured-by-a-doppler-lidar-.

[4] D. Schlipf, J. J. Trujillo, V. Basterra, and M. Kühn. "Development of a wind turbine LiDAR simulator". In: *European Wind Energy Conference*. Marseille, France, Mar. 2009. DOI: 10.18419/opus-3914.

[3] D. Schlipf and M. Kühn. "Prospects of a collective pitch control by means of predictive disturbance compensation assisted by wind speed measurements". In: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, Nov. 2008. DOI: 10.18419/opus-3900.

[2] A. Rettenmeier, D. Schlipf, M. Wächter, Y. Käsler, H. Mellinghoff, B. Siegmeier, L. Reeder, and M. Kühn. "Lidar technology for the german offshore test site "alpha ventus" - joint project in measurement development". In: *German Wind Energy Conference (DEWEK)*. Bremen, Germany, Nov. 2008. DOI: 10.18419/opus-3944.

[1] D. Schlipf, P. Bolognese Fernandes, and J. O. Trierweiler. "Modeling and identification of nonlinear systems using MIMO LEM-Hammerstein structure". In: *Workshop on Solving Industrial Control and Optimization Problems*. Gramado, Brazil, Apr. 2006. DOI: 10.18419/opus-8175.

Reports, White Papers and Conference Presentations

[29] D. Schlipf. *First Evaluation of the IEA Wind Task 52 LAC Summer Games 2024*. Jan. 2025. DOI: 10.5281/zenodo.14778978.

[28] W. Fu, D. Schlipf, S. Raach, S. White, M. Pitter, and C. Slinger. *Study on the impact of wind models and data processing on lidar-assisted control performance*. Presentation at the 22nd Coherent Laser Radar Conference (CLRC), Landshut, Germany. July 2024. DOI: 10.5281/zenodo.12666568.

[27] D. Schlipf, F. Guo, Z. Liang, M. Pitter, J. Lopez-Queija, J. Rinker, A. Venkatachalapathy, and S. Weich. *IEA Wind Task 52 LAC Summer Games 2024*. Aug. 2024. DOI: 10.5281/zenodo.13235189.

[26] D. Schlipf, G. Quiceno Soto, H. Zambrano Rodriguez, and S. Pérez Brovia. *Contribution of wind energy education to resilience in the face of the climate crisis*. Presentation at the "Congreso Internacional Resiliencias frente a la crisis climática" Santa Cruz de la Sierra, Bolivia. Aug. 2024. DOI: 10.5281/zenodo.13270425.

[25] E. Bermejo, J. Berrío, J. Llain, A. Rincón, D. Schlipf, and H. Zambrano. *Green hydrogen production with offshore wind at Colombian Caribbean Sea: Analysis for Atlántico Department's coast*. 2024. DOI: 10.5281/zenodo.10912206.

[24] D. Schlipf, F. Guo, S. Raach, and F. Lemmer. *A Tutorial on Lidar-Assisted Control for Floating Offshore Wind Turbines*. Presentation at the Amercian Control Conference. 2023. DOI: 10.5281/zenodo.10077758.

[23] U. Özinan, P. W. Cheng, S. Netzband, C. W. Schulz, M. Abdel-Maksoud, S. Raach, D. Schlipf, S. Aubrun, W. Bruch, B. Conan, Y. Perignon, J.-M. Rousset, R. Adam, M. Lüdde, and T. Neumann. *Lessons learned from the VAMOS project in collaboration with the FLOATEOLE project*. VAMOS Project Report. Dec. 2023. DOI: 10.5281/zenodo.10410945.

[22] F. Guo, F. Lemmer, D. Schlipf, and S. Raach. *Recommended Practices on Lidar-assisted Control of Floating Wind Turbines*. VAMOS Project Report. June 2023. DOI: 10.5281/zenodo.8031738.

[21] N. Afanasieva and D. Schlipf. "Improving the Quality of Wind Field Reconstruction Techniques for Lidar-assisted Control of Wind Turbines". In: *19thEAWE PhD Seminar on Wind Energy*. Sept. 2023. DOI: 10.5281/zenodo.8335186

[20] M. Pitter, C. Slinger, F. Guo, D. Schlipf, S. Raach, and S. White. *A data-driven approach to the design and implementation of retrofit lidar assisted control systems*. Presentation at Wind Energy Science Conference. May 2023. DOI: 10.5281/zenodo.8037351.

[19] W. Fu, F. Guo, D. Schlipf, and A. Peña. *Feedforward control for a 15-MW wind turbine using a spinner-mounted single-beam lidar*. Presentation at Wind Energy Science Conference. May 2023. DOI: 10.5281/zenodo.8033374.

[18] D. Schlipf, F. Lemmer, and F. Thomas. *Realization of wind field reconstruction for real- time monitoring and LIDAR-assisted control*. Presentation at 5th International Conference on Offshore Renewable Energy. Aug. 2021. DOI: 10.5281/zenodo.5608684.

[17] F. Lemmer, K. Lehmann, S. Raach, M. Al, D. Skandali, D. Schlipf, W. Yu, and P. W. Cheng. *Assessment of a State-Feedback Controller and Observer in a Floating Wind Turbine Scaled Experiment*. Presentation at Wind Energy Science Conference. May 2021. DOI: 10.5281/zenodo.5004916.

[16] F. Guo, D. Schlipf, and Y. Chen. *The impact of wind evolution and filter design on lidar-assisted wind turbine control*. Presentation at Wind Energy Science Conference. May 2021. DOI: 10.5281/zenodo.4890902.

[15] F. Thomas, D. Schlipf, and S. Raach. *Smart Lidar Systems for Floating Offshore Wind Turbines*. Presentation at Wind Energy Science Conference. May 2021. DOI: 10.5281/zenodo.5004524.

[14] J. A. Omole, D. Schlipf, A. Venu, and M. Ludde. *Bayesian neural network model for estimating fatigue loads on wind turbines*. Presentation at Wind Energy Science Conference. May 2021. DOI: 10.5281/zenodo.4923193.

[13] F. Novais, D. Schlipf, and S. Raach. *A Low Computational Framework for Testing Wind Farm Controllers*. Presentation at Wind Energy Science Conference. May 2021. DOI: 10.5281/zenodo.5008772.

[12] D. Schlipf, F. Guo, and Y. Chen. *Comparison of uncertainties in measurements from cup anemometers and lidar systems*. Presentation at Wind Energy Science Conference. May 2021. DOI: 10.5281/zenodo.4890902.

[11] A. Clifton and D. Schlipf. *Wind lidar technology development and transfer*. Presentation at Wind Energy Science Conference. May 2021. DOI: 10.5281/zenodo.4817725.

[10] J. Reuder, E. Cheynet, A. Clifton, M. F. van Dooren, J. Gottschall, J. B. Jakobsen, J. Mann, J. Palma, D. Schlipf, M. Sjøholm, J.-J. Trujillo, L. Thobois, I. Würth, and A. Zasso. *Recommendation on use of wind lidars*. LIKE Project Report. Apr. 2021. DOI: 10.5281/zenodo.4672351.

[9] D. Schlipf, F. Guo, S. Raach, and H. Zhu. *The Smart Lidar Concept - New Opportunities for the Lidar Community*. Presentation at IEA Wind Task 32 Workshop on Digitalization. Mar. 2021. DOI: 10.5281/zenodo.4627168.

[8] D. Schlipf. *An Overview of Lidar-Assisted Control*. IEA Wind Task 32 Webinar. Apr. 2020. DOI: 10.5281/zenodo.3764556.

[7] A. Clifton, D. Schlipf, N. Vasiljevic, J. Gottschall, P. Clive, I. Wüerth, R. Wagner, and N. Nygaard. *IEA Wind Task 32: Collaborative R&D Roadmap*. IEA Wind Task 32 White Paper. Sept. 2020. DOI: 10.5281/zenodo.4030701.

[6] D. Schlipf. *Set-Point-Fading for Wind Turbine Control*. Technical Presentation. Dec. 2019. DOI: 10.5281/zenodo.5567358.

[5] A. Clifton and D. Schlipf. *IEA Wind Task 32: Wind Lidar*. IEA Wind Task 32 White Paper. Oct. 2019. DOI: 10.5281/zenodo.3482839.

[4] A. Peña, C. Hasager, M. Badger, R. Barthelmie, F. Bingöl, J.-P. Cariou, S. Emeis, S. Frandsen, M. Harris, I. Karagali, S. Larsen, J. Mann, T. Mikkelsen, M. Pitter, S. Pryor, A. Sathe, D. Schlipf, C. Slinger, and R. Wagner. *Remote Sensing for Wind Energy*. DTU Wind Energy E 0084(EN). Denmark: DTU Wind Energy, 2015. URL: https://orbit.dtu.dk/en/publications/remote-sensing-for-wind-energy-4.

[3] A. Rettenmeier, O. Bischoff, D. Schlipf, J. Anger, M. Hofsäß, P. W. Cheng, R. Wagner, M. Courtney, and J. Mann. *Turbulence and wind speed investigations using a nacelle-based LIDAR scanner and a MET mast*. Presentation at European Wind Energy Association Annual Event. Copenhagen, Denmark, Apr. 2012. URL: https://www.slideserve.com/satya/turbulence-and-wind-speed-investigations-using-a-nacelle-based-lidar-scanner-and-a-met-mast.

[2] F. Dunne, D. Schlipf, L. Y. Pao, and A. D. Wright. *Comparison of two independent LIDAR-based pitch control designs*. Tech. rep. SR-5000-55544. NREL, Aug. 2012. URL: https://www.nrel.gov/docs/fy12osti/55544.pdf.

[1] D. Schlipf, E. Bossanyi, C. E. Carcangiu, T. Fischer, T. Maul, and M. Rossetti. *LIDAR assisted collective pitch control*. UpWind Report Deliverable D5.1.3. Endowed Chair of Wind Energy at Institute of Aircraft Design, Universität Stuttgart, 2011. DOI: 10.18419/opus-3913.