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julianquick.com
Google Scholar
Stackoverflow
LinkedIn
Github
Orcid

Julian Quick

Curriculum Vitae

Systems engineering and AI research with 10+ years experience in robust control, validation under uncertainty, and safety-critical autonomous systems

Education

2022 **Ph.D. Mechanical Engineering**, *University of Colorado*, Colorado, USA
Dissertation: "Outer-Loop Applications of Computational Fluid Dynamics for Wind Energy Systems"

2019 **M.S. Mechanical Engineering**, *University of Colorado*, Colorado, USA, 3.97 GPA

2015 **B.S. Environmental Resources Engineering**, *Humboldt State University*, California, USA

Impact Highlights

- **95% faster optimization:** Shipped novel stochastic optimization algorithm enabling layout design for 1,200+ unit fleets, now in production via TOPFARM.
- **47% less mechanical stress:** Risk-aware controller deployed in field with 100+ citations and 2 patent references.
- **72% more scenarios validated:** Predictive validation tool focusing expensive campaigns on high-risk conditions.
- **3 GW reference systems:** Technical lead for IEA Wind Task 55, defining international benchmark plants adopted across 5+ platforms.

Google Scholar Metrics

	All	Since 2020
Citations	584	535
h-index	13	13
i10-index	16	15

Web of Science Metrics

8 H-Index	26 Publications
198 Sum of Times Cited	164 Citing Articles
171 Sum of Times Cited without self-citations	148 Citing Articles without self-citations

Research Experience

7/2023– Present **Researcher**, *Department of Wind and Energy Systems*, Technical University of Denmark

- Enabled a 72% increase in scenario coverage from routine validation testing by developing a predictive tool that validated operational design space, focusing expensive campaigns only on high-risk scenarios.
- Shipped reinforcement learning framework for autonomous wind turbine fleet control system under adversarial sensor uncertainties with >90% unit test coverage.
- Led V&V strategy and development of cross-institutional system validation data pipeline, integrating five independent simulation platforms via shared schema, enabling scalable V&V and reliability assessment across digital twins.
- Shipping production-grade CI/CD pipelines and test automation for open-source modeling software, enabling safe, validated deployments of design tools used by over 30 wind energy companies.

5/2022– 7/2023 **Postdoctoral Researcher**, *Department of Wind Energy and Energy Systems*, Technical University of Denmark, Roskilde, Denmark

- Developed scalable wind farm optimization approach enabling LCOE/layout optimization of wind farms with more than 1,000 turbines.
- Developed surrogate modeling framework for long-term European electricity price time series forecasting, reducing computational time from 2+ days to real-time.

8/2017– 1/2022 **Graduate Research Assistant**, *Turbulence and Energy Systems Laboratory*, University of Colorado, Boulder, Colorado, USA

- Created and validated Python-based multi-fidelity uncertainty propagation and optimization systems engineering frameworks, reducing wind farm simulation costs for V&V and reliability assessment by 70-90%.
- Developed wind farm control strategies incorporating sensor uncertainties, increasing annual revenue by 0.5% while reducing risk of critical mechanical misalignment by 47%.

5/2015– 8/2017 **Wind Energy Systems Engineering Intern**, *National Renewable Energy Laboratory*, Boulder, Colorado, USA

- Built Python interface to DAKOTA C++ API with multi-node parallelism for V&V of stochastic simulations for assessing system performance robustness under uncertainty.
- Developed parallelized hybrid genetic algorithm for wind farm design (MINLP), jointly optimizing turbine types and placement; improved profit by 20% in large-scale field simulations.

5/2014– 8/2014 **Software Engineering Intern**, *National Center for Atmospheric Research*, Boulder, Colorado, USA

- Created a Python and Bash based live SQL data monitoring system to inform research aircraft technicians when atmospheric data collected is outside of the metadata range.
- Restructured metadata file: binary to XML converter, C++ application programming interface, and Python pyqt4 graphic user interface (GUI).
- Programmed pyqt4 GUIs for project managers to edit configuration files.

10/2013– 12/2015 **Project Manager**, *Humboldt State University Campus Center for Appropriate Technology*, Arcata, California, USA

- Managed groups of students creating projects, including 1,500 gallons of rainwater catchment, off-grid battery systems, energy load monitoring system, and green building course.
- Facilitated tours and demonstrations of Appropriate Technology to both large and small groups, including elementary school classes and university students, staff, and faculty.

Teaching Experience

2/2025–5/2025 **Wind Farm Optimization Course Co-Instructor**, *Department of Wind Energy and Energy Systems*, Technical University of Denmark, Lyngby, Denmark

- Presented 13 lectures covering optimization fundamentals, wind farm flow modeling, and wind farm optimization.
- Provided guidance to students in one-on-one sessions.

11/2024 **Wind Farm Optimization Course Lead Instructor**, *National Institute for Wind Energy*, Chennai, India

- Presented 5 8-hour lectures covering optimization fundamentals, wind farm flow modeling, and wind farm optimization.
- Provided hands-on laboratory exercises.

2/2024–5/2024 **Wind Farm Optimization Course Co-Instructor**, *Department of Wind Energy and Energy Systems*, Technical University of Denmark, Lyngby, Denmark

- Presented 13 lectures covering optimization fundamentals, wind farm flow modeling, and wind farm optimization.
- Provided guidance to students in one-on-one sessions.

4/2024–Present **PhD Thesis Supervision**, *Department of Wind Energy and Energy Systems*, Technical University of Denmark, Roskilde, Denmark

- Niall Timothy ONeill, *Optimization Under Uncertainty Applied to Wind Farm Design and Control*
- Deniz Gökhan Dirik, *Wind Farm Control Co-Design*
- Harihara Rajan Ramaswamy, *Wind Turbine Load Surrogate for Wind Farm Control*

4/2023–Present **Masters Thesis Supervision**, *Department of Wind Energy and Energy Systems*, Technical University of Denmark, Roskilde, Denmark

- Peter Huse Gaarde-Hansen, *Beyond LCOE Design of Wind Farms*, 2023
- Mikael Nerma, *Moving Beyond LCOE with COVE*, 2023
- Berkay Ates, *Maximising Wind Farm Revenue: A Value-Based Approach to Layout Optimisation*, 2024
- Lillian Elizabeth Peterson, *Multi-Objective Optimization for Hybrid Sizing and Objective Function Development*, 2024
- Lukas Hanisch, *Applying Real-Options Analysis for Overplanting Optimisation In Offshore Wind Tenders: A North Sea Case Study*, 2025
- Ming-Chen Kao, *The application of Normal Behavior Model (NBM) condition monitoring for optimal wind farm maintenance*, 2025
- Karolina Julia Uhl, *Efficiency of very large wind farms - focus on layout*, 2025
- Annemijn Stokman, *Efficiency of very large wind farms - focus on inter-annual variability*, 2025

1/2021–5/2021 **Graduate Teaching Assistant**, *Turbulence (Mechanical Engineering 7221 / Aerospace Engineering 6037)*, University of Colorado, Boulder, Colorado, USA

- Summarized student performance and provided feedback, utilizing simple statistics and charts for the professor's reference.

1/2015–12/2015 **Tutor**, *Society of Hispanic Professional Engineers*, Humboldt State University, Arcata, California, USA

- Assisted students in understanding and completing engineering assignments.

Teaching Experience (continued)

1/2014–12/2014 **Teaching Assistant**, *Computational Methods for Environmental Engineering II (Environmental Engineering 325)*, Humboldt State University, Arcata, California, USA

- Co-facilitated weekly classroom Fortran programming laboratories.
- Graded Fortran and probability theory assignments.
- Facilitated lectures and quizzes when the professor was unavailable.

Professional Service

Lectures and Seminars

6/2025 **Master's Thesis Committee Member**, *Piinshin Huang*, National Yang Ming Chiao Tung University, Taiwan

- Thesis: "A research on large-scale windfarm layout optimization in Hsinchu offshore region"

4/2025 **Invited Lecture**, *Verification and Validation of Wind Farm Flow Models*, AIRE consortium meeting, Online

10/2024 **Session Moderator**, *Systems Engineering*, NAWEA 2024, New Brunswick NJ

10/2024 **Session Moderator**, *Digital Solutions*, NAWEA 2024, New Brunswick NJ

11/2024 **Invited Lecture**, *Verification and Validation of Wind Farm Flow Models*, Meridinol consortium meeting, Milan IT

10/2024 **Session Moderator**, *Wind Energy Operations Optimization*, NAWEA 2023, Boulder CO

7/2024 **Invited Seminar**, *Verification and Validation of Wind Farm Flow Models*, TotalEnergies Wind R&D seminar series, Virtual

10/2022 **Co-Instructor**, *PyWake and TOPFARM Training*, Technical University of Denmark
Three lectures for industry software training: Optimization Fundamentals I, Optimization Fundamentals II, Turbulence Modeling and Wake Deflection

9/2021 **Invited Seminar**, *Outer-Loop Applications of Computational Fluid Dynamics for Wind Energy Systems*, National Renewable Energy Laboratory, Boulder, Colorado

4/2021 **Invited Lecture**, *Wind Energy Overview*, Energy for a Sustainable Future (Environmental Science 15), Cabrillo College, Aptos, California

4/2019 **Public Lecture**, *What's Blowing in the Wind? Wind Turbine Modeling and Wind Farm Optimization*, Pint of Science, Diebolt Brewing Company, Denver, Colorado

Organizations

1/2024–Present **Contributing Researcher**, *IEA Wind Task 44*, Reference Wind Plants

- Collaborating with international team to develop best practices for wind plant control field campaigns.

5/2023–Present **Technical Lead**, *IEA Wind Task 55*, Reference Wind Plants

- International collaboration to develop reference wind plants using IEA WindIO Ontology.
- Work package leader developing WindIO plant ontology.

Professional Service (continued)

Organizations (continued)

8/2020– Present **Contributing Researcher**, *IEA Wind Task 43*, Data Science, Data Standards, and Data Sharing

- Collaborating with international team to develop recommendations for the future of wind energy data.

5/2021– 12/2022 **Founding Member**, *Committee for Equity in Mechanical Engineering (CEME)*, Paul M. Rady Department of Mechanical Engineering, University of Colorado, Boulder, Colorado

- Spearheaded effort to mitigate the potential of implicit bias influencing preliminary exam results.

8/2014– 8/2015 **President**, *Renewable Energy Student Union*, Humboldt State University, Arcata, California

- Led group of approximately 15 students: maintenance of NREL solar monitoring station, micro-hydro power demonstration, DOE Hydrogen fueling station and NREL net-zero energy housing design competitions, bicycle blender, and off-grid facility energy audit.

Mentorship

5/2020– 8/2021 **Mentorship and Advising of Visiting Student**, *Technical university of Denmark*, Denmark

- Advised Piinshin Huang, visiting masters' student from National Yang Ming Chiao Tung University: Wake Effect on Floating Offshore Wind: A Case Study in Fengfan Offshore Wind Farm.
- Advised Thuy-Hai Nguyen, visiting PhD student from Université de Mons: Wind farm layout optimization accounting for reserve market participation
- Advised Maxine Kellenberger from Swiss Federal Institute of Technology Zurich: Region-specific wind power plant LCOE model

5/2020– 8/2021 **Mentor**, *Fluid Dynamics Preliminary Exam Preparation*, Paul M. Rady Department of Mechanical Engineering, University of Colorado, Boulder, Colorado

- Tutored and quizzed students in advanced fluid mechanics topics.
- Encouraged students to perform thought experiments for deeper understandings of fluid mechanics.

2/2016– 8/2017 **Peer Mentor**, *Women of Wind Energy*

- Regularly participated in meetings and book club.

Peer Review Service

IEEE Transactions on Control Systems, *Journal of Wind Engineering and Industrial Aerodynamics*, *Renewable Energy*, *Sustainable Energy Technologies and Assessments*, *Wind Energy*, *Wind Energy Science*

Professional Service (continued)

Other Service

- 2024 North American Wind Energy Academy abstracts review for the Systems Engineering and Digitalization tracks.
- Juror for offshore engineering course EI ST4 2024 exam in Paris-Saclay University.
- DTU Wind and Energy Systems department FAIR data coordinator (01/2023-Present), coordinating data management planning, curating the DTU ontologies, and contributing to two technical reports directed towards the Danish government recommending strategic approaches for improving national FAIR data infrastructure.

Publications

Book Chapter

- Andrew Ning, Katherine Dykes, and **Julian Quick**. *Systems engineering and optimization of wind turbines and power plants*, volume 2, pages 235–92. Institution of Engineering and Technology, 2019

Peer-Reviewed Journal Publications

- Jens Peter Schøler, Frederik Peder Weilmann Rasmussen, **Julian Quick**, and Pierre-Elouan Réthoré. Graph neural operator for windfarm wake flow. *Wind Energy Science Discussions (in press)*, pages 1–38, 2025. In review
- **Julian Quick**, Edward Hart, Marcus Binder Nilsen, Rasmus Sode Lund, Jaime Liew, Piinshin Huang, Pierre-Elouan Rethore, Jonathan Keller, Wooyong Song, and Yi Guo. Reductions in wind farm main bearing rating lives resulting from wake impingement. *Wind Energy Science Discussions (In Press)*, 2025:1–19, 2025
- Juan Pablo Murcia Leon, **Julian Quick**, Nikolaj Stokholm Overgaard, Valentino Servizi, Nikolay Dimitrov, and Taeseong Kim. Reducing the number of wind turbine prototype measurement campaigns for power curve model validation using a model-validity predictor. *Renewable Energy*, 2025. (in press)
- Tuhfe Göçmen, Jaime Liew, Elie Kadoche, Nikolay Dimitrov, Riccardo Riva, Søren Juhl Andersen, Alan WH Lio, Julian Quick, Pierre-Elouan Réthoré, and Katherine Dykes. Data-driven wind farm flow control and challenges towards field implementation: A review. *Renewable and Sustainable Energy Reviews*, 216:115605, 2025
- **Quick, Julian**, Juan Pablo Murcia Leon, Carsten Weber Kock, Valentino Servizi, Nikolaj Stokholm Overgaard, Nikolay Dimitrov, Mark Kelly, Pierre-Elouan Réthoré, and Taeseong Kim. Wind speed vertical extrapolation model validation under uncertainty. *Renewable Energy*, 240:122028, 2025
- Thuy-Hai Nguyen, **Julian Quick**, Pierre-Elouan Réthoré, Jean-François Toubeau, Emmanuel De Jaeger, and François Vallée. Offshore wind farm layout optimization accounting for participation to secondary reserve markets. *Wind Energy Science*, 2025, 2025

- Charbel Assaad, Juan Pablo Murcia Leon, **Julian Quick**, Tuhfe Göçmen, Sami Ghazouani, and Kaushik Das. Enabling efficient sizing of hybrid power plants: a surrogate-based approach to energy management system modeling. *Wind Energy Science*, 2024:1–33, 2024
- **Julian Quick**, Juan Pablo Murcia Leon, Polyneikis Kanellas, Sumanth Yamujala, Kaushik Das, and Matti Juhani Koivisto. Surrogate-based modeling and sensitivity analysis of future european electricity spot market prices. *Electric Power Systems Research*, 234:110675, 2024
- Javier Criado Risco, Rafael Valotta Rodrigues, Mikkel Friis-Møller, **Julian Quick**, Mads Mølgaard Pedersen, and Pierre-Elouan Réthoré. Gradient-based wind farm layout optimization with inclusion and exclusion zones. *Wind Energy Science*, 9(3):585–600, 2024
- Yuriy Marykovskiy, Thomas Clark, Justin Day, Marcus Wiens, Charles Henderson, **Julian Quick**, Imad Abdallah, Anna Maria Sempreviva, Jean-Paul Calbimonte, Eleni Chatzi, et al. Knowledge engineering for wind energy. *Wind Energy Science*, 9(4):883–917, 2024
- Rafael Valotta Rodrigues, Mads Mølgaard Pedersen, Jens Peter Schøler, **Julian Quick**, and Pierre-Elouan Réthoré. Speeding up large-wind-farm layout optimization using gradients, parallelization, and a heuristic algorithm for the initial layout. *Wind Energy Science*, 9(2):321–341, 2024
- Andrew Clifton, Sarah Barber, Andrew Bray, Peter Enevoldsen, Jason Fields, Anna Maria Sempreviva, Lindy Williams, **Julian Quick**, Mike Purdue, Philip Totaro, et al. Grand challenges in the digitalisation of wind energy. *Wind Energy Science*, 8(6):947–974, 2023
- **Julian Quick**, Pierre-Elouan Rethore, Mads Mølgaard Pedersen, Rafael Valotta Rodrigues, and Mikkel Friis-Møller. Stochastic gradient descent for wind farm optimization. *Wind Energy Science*, 8(8):1235–1250, 2023
- **Julian Quick**, Ryan N. King, Marc T. Henry de Frahan, Shreyas Ananthan, Michael A. Sprague, and Peter E. Hamlington. Field Sensitivity Analysis of Turbulence Model Parameters for Flow Over a Wing. *International Journal for Uncertainty Quantification*, 12(1):85–106, 2022
- **Julian Quick**, Jennifer King, Ryan N. King, Peter E. Hamlington, and Katherine Dykes. Wake steering optimization under uncertainty. *Wind Energy Science*, 5(1):413–426, 2020
- **Julian Quick**, Ryan N King, Garrett Barter, and Peter E Hamlington. Multifidelity multiobjective optimization for wake-steering strategies. *Wind Energy Science*, 7(5):1941–1955, 2022
- Sarah Barber, Luiz Andre Moyses Lima, Yoshiaki Sakagami, **Julian Quick**, Effi Latiffianti, Yichao Liu, Riccardo Ferrari, Simon Letzgus, Xujie Zhang, and Florian Hammer. Enabling co-innovation for a successful digital transformation in wind energy using a new digital ecosystem and a fault detection case study. *Energies*, 15(15):5638, 2022

Technical Reports

- Thomas Clark, **Julian Quick**, Des Farren, Anna Maria Sempreviva, Shuangwen Sheng, and Sarah Barber. Evolving the wind energy sector towards frictionless and sustainable data usage. Technical report, IEA Wind, 2025
- **Julian Quick**, Charbel Assaad, Ernestas Simutis, Juan Pablo Murcia Leon, and Pierre-Elouan Réthoré. SUDOCO deliverable 3.2: Economic value function model. Technical report, European Union Horizon Europe Programme, 2024. Grant Agreement 101122256
- Pieter M. O. Gebraad, Samuel Kainz, Abhinav Anand, Adrien Guilloré, **Julian Quick**, and Deniz Gökhan Dirik. SUDOCO deliverable 3.1: Reference scenarios. Technical report, European Union Horizon Europe Programme, 2024. Grant Agreement 101122256
- Vasilis Pettas, **Julian Quick**, Riccardo Riva, Harihara Rajan Ramaswamy, Deniz Gökhan Dirik, Ming-Chen Kao, Michael Kenneth McWilliam, Adrien Guilloré, Anik Hirenkumar Shah, Carlo L. Bottasso, Stefano Cacciola, Alessandro Croce, Daan van der Hoek, Tim Dammann, and Marian Albers. SUDOCO deliverable 2.2: Health model. Technical report, European Union Horizon Europe Programme, 2025. Grant Agreement 101122256
- Samuel Kainz, **Julian Quick**, Mauricio Souza de Alencar, Sebastian Sanchez Perez Moreno, Katherine Dykes, Christopher Bay, Michiel B Zaaijer, and Pietro Bortolotti. IEA Wind TCP Task 55: The IEA Wind 740-10-MW Reference Offshore Wind Plants. Technical report, National Renewable Energy Laboratory (NREL), Golden, CO (United States), 2024
- Nicolas Munoz Castellano, Marcus Duschl, Altug Emiroglu, Des Farren, Berthold Hahn, Marc Alexander Lutz, Noah Myrent, **Quick, Julian**, Anna Maria Sempreviva, and Lili Haus. IEA Wind Task 43: An investigation of the standards landscape in the wind energy sector, May 2024
- John Renner Hansen, Lise Arleth, Bo Nygaard Bai, Jakob Bech Petersen, Jens Begtrup, Rene Belso, Sandra Boerman, Kim Brinckmann, Mareike Buss, Carina Ollerup Christensen, Ulrik Nicolaj de Lichtenberg, Susanne den Boer, Lars Ove Dragsted, Annemarie Falktoft, Anne Sofie Fink, Søren Friis Hansen, Jens Grønbech Hansen, Hans Henrik Halvbjørn, Claus Dalsgaard Hansen, tjerk heijboer, Bjørn Høj Jakobsen, Falco Jonas Hüser, Jens Hybschmann, Bjarke Kaspersen Stoltze, Hanne-Louise Kirkegaard, Kirsten Krogh Kruuse, Birger Larsen, Tore Larsen Burkal, Janni Lee Brodersen, Børge Lindberg, Haakon Lund, Hannah Mihai, Per Møldrup-Dalum, Ulla Nielsen Gro, Lene Oddershede, Jonas Langeland Pedersen, Nicolaj Pedersen Tanderup, **Quick, Julian**, Jonas Rank Møller, Lasse Rosendahl Aistrup, Thomas Schlicting, Peter Severin de Fønss, Robert Smith, Carsten Sørensen, Jakob Sørensen, Martin Svensson, Konstantinos Tsirigos, Allan Timmerman, Lasse Tougaard Friis, Asger Væring Larsen, Sara Marie Westh, Sacha Zurcher, Søren Broberg Nielsen, and Evgenios Vlachos. Annual report 2024 - national strategy for data management based on the fair principles, January 2025

- Kirsten Krogh Kruuse, Bo Nygaard Bai, Ulrik Nicolaj de Lichtenberg, Mareike Buss, Morten Ingvard Falck, Per Møldrup-Dalum, Lars Ove Dragsted, Jens Grønbech Hansen, Jens Hybschmann, Lindie Tessmer Andersen, René Belsø, Jonas Rank Møller, Allan Timmerman, **Quick, Julian**, Charles Vestegham, Ulla Gro Nielsen, Tjerk Heijboer, Asger Væring Larsen, Hans Henrik Halvbjørn, Jens Begtrup, Nicolai Pedersen Tanderup, Lise Arleth, Jakob Sørensen, Birger Larsen, John Renner Hansen, Tore Burkal Larsen, Børge Lindberg, Morten Andreasen, Sandra Boerman, Haakon Lund, Sara Marie Westh, Evgenios Vlachos, Claus Hansen, Falco Hüser, Sacha Zurcher, Nikolaj Borg Burmeister, Hannah Mihai, Thomas Schlichting, Peter Severin de Fønss, Robert Smith, Mads Sinkjær Kjærgaard, Bjørn Høj Jakobsen, Janni Lee Brodersen, Lasse Tougaard Friis, Michael Specht, Jakob Bech Petersen, Susanne den Boer Beckers, Søren Friis Hansen, Michael Svendsen, Simon Haas Svith, and Anne Sofie Fink Kjeldgaard. Goals and action plan for the national strategy for data management based on the fair principles (mandate period 2023-25), April 2024

Conference Proceedings

- Piinshin Huang, Yi-Hsiang Yu, and **Julian Quick**. Wake effect on floating offshore wind: A case study in fengfan offshore wind farm. In *International Conference on Offshore Mechanics and Arctic Engineering*, volume 88940. ASME, 2025
- Andreas Bechmann and **Quick, Julian**. Market-driven wind resource assessment. In *Journal of Physics: Conference Series*, volume 3025, page 012001. IOP Publishing, 2025
- Deniz Dirik, **Quick, Julian**, Pierre Réthoré, Juan Pablo Murcia Leon, and Riccardo Riva. Revenue-focused wind farm control co-design for future electricity markets scenarios. In *Journal of Physics: Conference Series*, volume 3016, page 012024. IOP Publishing, 2025
- Niall ONeill, Pierre-Elouan Réthoré, Rem-Sophia Mouradi, Antoine Mathieu, and **Julian Quick**. Wind farm layout optimization accounting for uncertainty in model selection. In *Journal of Physics: Conference Series*, volume 3016, page 012054. IOP Publishing, 2025
- Jens Peter Schøler, Nicole Rosi, **Julian Quick**, Riccardo Riva, Søren Juhl Andersen, Juan Paublo Murcia Leon, Paul Van Der Laan, and Pierre-Elouan Réthoré. Rans wake surrogate: Impact of physics information in neural networks. In *Journal of Physics: Conference Series*, volume 2767, page 092033. IOP Publishing, 2024
- Maria Sarcos, **Julian Quick**, Andrea N Hahmann, Nicolas G Alonso-De-Linaje, Neil Davis, and Mikkel Friis-Møller. Need for speed: Fast wind farm optimization. In *Journal of Physics: Conference Series*, volume 2767, page 092088. IOP Publishing, 2024
- **Julian Quick**, Rem-Sophia Mouradi, Koen Devesse, Antoine Mathieu, M Paul Van Der Laan, Juan Pablo Murcia Leon, and Jonas Schulte. Verification and validation of wind farm flow models. In *Journal of Physics: Conference Series*, volume 2767, page 092074. IOP Publishing, 2024
- Rafael Mudafort, **Julian Quick**, and Jonas Schulte. Comparison of steady-state analytical wake models implemented in wind farm analysis software. In *Journal of Physics: Conference Series*, volume 2767, page 052066. IOP Publishing, 2024

- **Julian Quick**, Peter E. Hamlington, Ryan King N., and Michael A. Sprague. Multifidelity uncertainty quantification with applications in wind turbine aerodynamics. In *AIAA Scitech 2019 Forum*, page 0542, 2019
- Peter A Graf, Ryan N. King, Katherine Dykes, **Julian Quick**, Levi Kilcher, and Jennifer Rinker. Temporal coherence importance sampling for wind turbine extreme loads estimation. In *AIAA Scitech 2019 Forum*, page 1798, 2019
- Ryan N. King, **Julian Quick**, Christiane Adcock, and Katherine Dykes. Active subspaces for wind plant surrogate modeling. In *2018 Wind Energy Symposium*, page 2019, 2018
- Amy N Robertson, Latha Sethuraman, Jason Jonkman, and **Julian Quick**. Assessment of wind parameter sensitivity on extreme and fatigue wind turbine loads. In *2018 Wind Energy Symposium*, page 1728, 2018
- Latha Sethuraman, **Julian Quick**, Katherine Dykes, and Yi Guo. Exploring optimization opportunities in four-point suspension wind turbine drivetrains through integrated design approaches. In *2018 Wind Energy Symposium*, page 1000, 2018
- **Julian Quick**, Jennifer Annoni, Ryan N. King, Katherine Dykes, Paul Fleming, and Andrew Ning. Optimization under uncertainty for wake steering strategies. In *Journal of physics: Conference series*, volume 854, page 012036. IOP Publishing, 2017
- Peter Graf, Katherine Dykes, George Scott, Jason Fields, Monte Lunacek, **Julian Quick**, and Pierre-Elouan Rethore. Wind farm turbine type and placement optimization. In *Journal of Physics: Conference Series*, volume 753, page 062004. IOP Publishing, 2016
- **Julian Quick**, Katherine Dykes, Peter Graf, and Frederik Zahle. Optimization under uncertainty of site-specific turbine configurations. In *Journal of Physics: Conference Series*, volume 753, page 062012. IOP Publishing, 2016

Conference Presentations

- Garrett Barter, Chris Bay, Pietro Bortolotti, Rafael Mudafort, Kenneth Lønbæk, **Julian Quick**, and Frederik Zahle, "windIO v2.0: A New Release for the Common Schema of Wind Energy Systems " *Wind Energy Science Conference*, 2025
- Nicola Bodini, Aliza Abraham, Paula Doubrawa, Stefano Letizia, Ryan Scott, Patrick Moriarty, Robert Braunbehrens, Desirae Major, Carlo Bottasso, **Julian Quick**, Paul van der Laan, Oscar Garcia-Santiago, Alfredo Peña, Rogier Floors, William Radünz, Julie Lundquist, Ali Khanjari, Cristina Archer, Raj Rai, Colleen Kaul, Adam Wise, Lawrence Cheung, Myra Blaylock, Thomas Herges, Dan Houck, Chris Kelley, Jonas Schulte, Mike Optis, Camille Dubreuil, Anh Kiet Nguyen, Ru LI, Kishore Vimalakanthan, Bruno Carmo, Luan Parada, and David Ricarte, "Results from the AWAKEN Wind Farm Benchmark" *Wind Energy Science Conference*, 2025
- Samuel Kainz, **Julian Quick**, Christopher J. Bay, Amir Arasteh, Mauricio Souza de Alencar, Rafael Valotta Rodrigues, Abhinav Kapila, Bruno Nguyen, Carlo L. Bottasso, Pierre-Elouan Réthoré, Pietro Bortoloti, "The IEA Wind 2200-22-MW Reference Offshore Wind Plants: sequential vs. cooperative design" *Wind Energy Science Conference*, 2025

- **Julian Quick**, Juan Pablo Murcia Leon, Polyneikis Kanellas, Sumanth Yamujala, Kaushik Das, and Matti Juhani Koivisto "Surrogate-Based Modeling and Sensitivity Analysis of Future European Electricity Spot Market Prices" *Power Systems and Control Conference*, 2024
- **Julian Quick** "WindIO Plant Ontology" *First Annual Meeting of IEA Wind Task 55 REFWIND*, 2024
- **Julian Quick**, Rem-Sophia Mouradi, Koen Devesse, Antoine Mathieu, M. Paul van der Laan, Juan Pablo Murcia Leon, and Jonas Schulte, "Verification and Validation of Wind Farm Flow Models" *TORQUE Conference*, 2024
- **Julian Quick**, Edward Hart, Rasmus Sode Lund, Jaime Liew, Pierre-Elouan Rethore, Jonathan Keller, and Yi Guo, "Main Bearing Fatigue Life Under the Influence of Wind Turbine Wakes" *NAWEA Conference*, 2023
- **Julian Quick**, Pierre-Elouan Rethore, Mads Mølgaard Pedersen, and Rafael Valotta Rodrigues, "Stochastic Gradient Descent for Wind Farm Optimization in TOPFARM" *Wind Energy Science Conference*, 2023
- **Julian Quick** and Juan Pablo Murcia Leon, "Validation and Error Prediction of a Vertical Extrapolation Model" *Wind Energy Science Conference*, 2023
- **Julian Quick**, Pierre-Elouan Rethore, Mads Mølgaard Pedersen, and Rafael Valotta Rodrigues, "Optimizing the Biggest Wind Farms in the World" *WindEurope*, 2023
- **Julian Quick**, Anna Maria Sempreviva, Berthold Hahn, Volker Berkhout, Mike Kelly, Yu Ding, Fiona Lüdecke, Sarah Barber, Mike Purdue "IEA Task 43 Data Standards Roadmap: Enhancing the Value of Data in the Wind Energy Sector" *WindEurope*, 2022
- **Julian Quick**, "Optimization and Load Surrogates Using Multi-Fidelity Models" *International Energy Agency Collaborative Research Task on Wind Energy Systems Engineering Workshop: Load Surrogates and Reliability-Based Optimization for Wind Farms*, 2021
- **Julian Quick**, Sarah Barber, Yu Ding, Berthold Hahn, Mike Kelly, Fiona Lüdecke, Mike Purdue, and Anna Maria Sempreviva, "Shared Semantics and Incentivizing Data Sharing" *International Energy Agency Collaborative Research Task on Wind Energy Digitalization – 3rd General Meeting*, 2021
- **Julian Quick**, Ryan N. King, Peter E. Hamlington, Multifidelity Multiobjective Optimization for Wake Steering Strategies, *Rocky Mountain Fluid Mechanics Research Symposium*, 2021
- **Julian Quick**, Ryan N. King, Peter E. Hamlington. Multiobjective Multifidelity Optimization for Wake Steering Design, *Society for Industrial and Applied Mathematics Conference on Computational Science and Engineering Mini-symposium 140: Multifidelity Sampling Approaches for Forward/Inverse UQ and Optimization under Uncertainty*, 2021
- **Julian Quick**, Ryan N. King, Marc Henry de Frahan, Shreyas Ananthan, Michael A. Sprague, and Peter E. Hamlington. "Field sensitivity analysis for wind energy modeling", *Bulletin of the American Physical Society*, 2020
- **Julian Quick**, Peter E. Hamlington, Ryan N. King, Marc Henry de Frahan, Shreyas Ananthan, Michael Sprague, Field Sensitivity Analysis for Wind Energy Modeling, *Rocky Mountain Fluid Mechanics Research Symposium*, 2020

- **Julian Quick**, Peter E. Hamlington, Ryan N. King, Michael Sprague, Capturing a Blade Tip Vortex, *Rocky Mountain Fluid Mechanics Research Symposium*, 2019
- **Julian Quick**, Peter E. Hamlington, Ryan N. King, and Michael A. Sprague, 2019. Multifidelity Uncertainty Quantification with Applications in Wind Turbine Aerodynamics. In *AIAA Scitech 2019 Forum*
- **Julian Quick**, Optimization Under Uncertainty for Wake Steering Strategies, *Wake Conference*, Uppsala University, Visby, Sweden, 2017
- **Julian Quick**, Jennifer Annoni, Ryan N. King, Paul Fleming, Andrew Ning, and Katherine Dykes, Optimization Under Uncertainty for Wind Power Plant Wake Steering Strategies, *Rocky Mountain Fluid Mechanics Research Symposium*, 2017
- **Julian Quick**, Jennifer Annoni, Ryan N. King, Katherine Dykes, Paul Fleming, Andrew Ning. Optimization Under Uncertainty for Wake Steering Strategies, *Wind Energy Science Conference,* 2017