# Lucy Pao

## List of Publications by Year
## in descending order

| 117 papers | 4,647 citations | 212478<br>28 h-index | 169272<br>56 g-index |
|---|---|---|---|
| 118 all docs | 118 docs citations | 118 times ranked | 2879 citing authors |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 1 | Experimental Testing of a Preview-Enabled Model Predictive Controller for Blade Pitch Control of Wind Turbines. IEEE Transactions on Control Systems Technology, 2022, 30, 583-597. | 3.2 | 13 |
| 2 | Model Predictive Active Power Control for Optimal Structural Load Equalization in Waked Wind Farms. IEEE Transactions on Control Systems Technology, 2022, 30, 30-44. | 3.2 | 18 |
| 3 | A comparison of tracking step inputs with a piezo stage using model predictive control and saturated linear quadratic Gaussian control. Control Engineering Practice, 2022, 118, 104972. | 3.2 | 0 |
| 4 | A reference open-source controller for fixed and floating offshore wind turbines. Wind Energy Science, 2022, 7, 53-73. | 1.2 | 84 |
| 5 | Constrained power reference control for wind turbines. Wind Energy, 2022, 25, 914-934. | 1.9 | 10 |
| 6 | Active rotor coning for a 25 MW downwind offshore wind turbine. Journal of Physics: Conference Series, 2022, 2265, 032022. | 0.3 | 1 |
| 7 | Field tests of a highly flexible downwind ultralight rotor to mimic a 13-MW turbine rotor. Journal of Physics: Conference Series, 2022, 2265, 032031. | 0.3 | 2 |
| 8 | Power increases using wind direction spatial filtering for wind farm control: Evaluation using FLORIS, modified for dynamic settings. Journal of Renewable and Sustainable Energy, 2021, 13, 023310. | 0.8 | 10 |
| 9 | Controllability of Formation Systems on Special Orthogonal Groups Over Directed Graphs. IEEE Transactions on Control of Network Systems, 2021, 8, 872-883. | 2.4 | 1 |
| 10 | Control co-design of 13 MW downwind two-bladed rotors to achieve 25% reduction in levelized cost of wind energy. Annual Reviews in Control, 2021, 51, 331-343. | 4.4 | 36 |
| 11 | Estimation of Large-Scale Wind Field Characteristics using Supervisory Control and Data Acquisition Measurements. , 2020, , . | | 5 |
| 12 | Improving the Image Acquisition Rate of an Atomic Force Microscope Through Spatial Subsampling and Reconstruction. IEEE/ASME Transactions on Mechatronics, 2020, 25, 570-580. | 3.7 | 7 |
| 13 | Servo-aero-gravo-elastic (SAGE) scaling and its application to a 13-MW downwind turbine. Journal of Renewable and Sustainable Energy, 2020, 12, 063301. | 0.8 | 8 |
| 14 | Automatic controller tuning using a zeroth-order optimization algorithm. Wind Energy Science, 2020, 5, 1579-1600. | 1.2 | 13 |
| 15 | Wind Tunnel Testing of an Optimal Feedback/feedfoward Control Law for Wind Turbines. IFAC-PapersOnLine, 2020, 53, 12638-12643. | 0.5 | 0 |
| 16 | Lifetime extension of waked wind farms using active power control. Journal of Physics: Conference Series, 2019, 1256, 012029. | 0.3 | 4 |
| 17 | Grand challenges in the science of wind energy. Science, 2019, 366, . | 6.0 | 482 |
| 18 | Flow Control Leveraging Downwind Rotors for Improved Wind Power Plant Operation. , 2019, , . | | 18 |

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|---|---------|-----|-----------|
| 19 | Constrained Wind Turbine Power Control. , 2019, , . | | 9 |
| 20 | A Harmonic Model for Loads Analysis and Control Design of a 2-bladed Wind Turbine. , 2019, , . | | 2 |
| 21 | Design and Testing of a Scaled Demonstrator Turbine at the National Wind Technology Center. , 2019, , . | | 12 |
| 22 | Adjoint-based model predictive control for optimal energy extraction in waked wind farms. Control Engineering Practice, 2019, 84, 48-62. | 3.2 | 43 |
| 23 | An active power control approach for wake-induced load alleviation in a fully developed wind farm boundary layer. Wind Energy Science, 2019, 4, 139-161. | 1.2 | 34 |
| 24 | System-level design studies for large rotors. Wind Energy Science, 2019, 4, 595-618. | 1.2 | 24 |
| 25 | Proximate Time-Optimal Control of a Harmonic Oscillator. IEEE Transactions on Automatic Control, 2018, 63, 1676-1691. | 3.6 | 5 |
| 26 | Large-eddy simulation study of wind farm active power control with a coordinated load distribution. Journal of Physics: Conference Series, 2018, 1037, 032018. | 0.3 | 6 |
| 27 | Model Predictive Active Power Control of Waked Wind Farms. , 2018, , . | | 10 |
| 28 | Active Power Control for Wind Farms Using Distributed Model Predictive Control and Nearest Neighbor Communication. , 2018, , . | | 30 |
| 29 | Hardware Demonstration of Atomic Force Microscopy Imaging Via Compressive Sensing and $\mu$-Path Scans. , 2018, , . | | 9 |
| 30 | Efficient Optimization of Large Wind Farms for Real-Time Control. , 2018, , . | | 31 |
| 31 | A Comparison of Individual and Collective Pitch Model Predictive Controllers for Wind Turbines. , 2018, , . | | 3 |
| 32 | Online model calibration for a simplified LES model in pursuit of real-time closed-loop wind farm control. Wind Energy Science, 2018, 3, 749-765. | 1.2 | 21 |
| 33 | Fast setpoint tracking of an Atomic Force Microscope X–Y stage via optimal trajectory tracking. , 2017, , . | | 4 |
| 34 | Ensemble Kalman filtering for wind field estimation in wind farms. , 2017, , . | | 23 |
| 35 | An application of the fast gradient method to model predictive control of an atomic force microscope X-Y stage. , 2017, , . | | 1 |
| 36 | Models used for the simulation and control of a segmented ultralight morphing rotor. IFAC-PapersOnLine, 2017, 50, 4478-4483. | 0.5 | 11 |

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| 37 | ...Power Control of Waked Wind Farms * *J.W. van Wingerden would like to acknowledge the CL-Windcon project. This project has received funding from the European Union Horizon 2020 research and innovation programme under grant agreement No 727477. L. Pao gratefully acknowledges funding provided by the Hanse-Wissenschaftskolleg Institute for Advanced Study, Delmenhorst, Germany. J. Aho has been supported in part by the Renewable and Sustainable Energy Institute and a University of Colorado Boulder Graduat. IFAC-PapersOnLine, 2017, 50, 4484-4491. | 0.5 | 40 |
| 38 | Effects of power reserve control on wind turbine structural loading. Wind Energy, 2016, 19, 453-469. | 1.9 | 39 |
| 39 | Analysis of gain-scheduling implementation for the NREL 5-MW turbine blade pitch controller. , 2016, , . | | 4 |
| 40 | Proximate time-optimal reference tracking of an undamped harmonic oscillator. , 2016, , . | | 3 |
| 41 | Evaluation of a wind speed estimator for effective hub-height and shear components. Wind Energy, 2016, 19, 167-184. | 1.9 | 27 |
| 42 | The fatigue loading effects of yaw control for wind plants. , 2016, , . | | 11 |
| 43 | Active power control of wind turbines for ancillary services: A comparison of pitch and torque control methodologies. , 2016, , . | | 26 |
| 44 | Computational fluid dynamics simulation study of active power control in wind plants. , 2016, , . | | 38 |
| 45 | Optimal blade pitch control with realistic preview wind measurements. Wind Energy, 2016, 19, 2153-2169. | 1.9 | 22 |
| 46 | Wind plant power optimization through yaw control using a parametric model for wake effects-a CFD simulation study. Wind Energy, 2016, 19, 95-114. | 1.9 | 438 |
| 47 | A longitudinal spatial coherence model for wind evolution based on large-eddy simulation. , 2015, , . | | 28 |
| 48 | Proximate time-optimal control of a second-order flexible structure. , 2015, , . | | 4 |
| 49 | Importance of lidar measurement timing accuracy for wind turbine control. , 2014, , . | | 13 |
| 50 | Analysis of light detection and ranging wind speed measurements for wind turbine control. Wind Energy, 2014, 17, 413-433. | 1.9 | 54 |
| 51 | Gearbox and Drivetrain Models to Study Dynamic Effects of Modern Wind Turbines. IEEE Transactions on Industry Applications, 2014, 50, 3777-3786. | 3.3 | 66 |
| 52 | Optimizing the Layout of Heaters for Distributed Active De-Icing of Wind Turbine Blades. Wind Engineering, 2014, 38, 587-600. | 1.1 | 10 |
| 53 | A Model-Free Approach to Wind Farm Control Using Game Theoretic Methods. IEEE Transactions on Control Systems Technology, 2013, 21, 1207-1214. | 3.2 | 247 |
| 54 | Stability analysis of a wind turbine active power control system. , 2013, , . | | 6 |

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|---|---------|-----|-----------|
| 55 | Gearbox and drivetrain models to study dynamic effects of modern wind turbines. , 2013, , . | | 21 |
| 56 | Optimal trajectory tracking control for wind turbines during operating region transitions. , 2013, , . | | 8 |
| 57 | Benefit of wind turbine preview control as a function of measurement coherence and preview time. , 2013, , . | | 10 |
| 58 | An Active Power Control System for Wind Turbines Capable of Primary and Secondary Frequency Control for Supporting Grid Reliability. , 2013, , . | | 44 |
| 59 | A spectral model for evaluating the effect of wind evolution on wind turbine preview control. , 2013, , . | | 15 |
| 60 | Intersample ripple resulting from discrete-time feedforward control. , 2013, , . | | 0 |
| 61 | H&lt;inf&gt;2&lt;/inf&gt; model matching feedforward control for tape head positioning servo systems. , 2013, , . | | 1 |
| 62 | Reducing LIDAR wind speed measurement error with optimal filtering. , 2013, , . | | 20 |
| 63 | Correlation between Rotating LIDAR Measurements and Blade Effective Wind Speed. , 2013, , . | | 12 |
| 64 | LIDAR Wind Speed Measurements of Evolving Wind Fields. , 2012, , . | | 17 |
| 65 | Multi-Blade Coordinate and direct techniques for asymptotic disturbance rejection in wind turbines. , 2012, , . | | 0 |
| 66 | Comparison of feedforward and model predictive control of wind turbines using LIDAR. , 2012, , . | | 18 |
| 67 | Linear time-varying impulse optimization for data association. , 2012, , . | | 0 |
| 68 | Non-raster sampling in atomic force microscopy: A compressed sensing approach. , 2012, , . | | 39 |
| 69 | A Discrete-Time Single-Parameter Combined Feedforward/Feedback Adaptive-Delay Algorithm With Applications to Piezo-Based Raster Tracking. IEEE Transactions on Control Systems Technology, 2012, 20, 416-423. | 3.2 | 14 |
| 70 | Achieving pareto optimality through distributed learning. , 2012, , . | | 23 |
| 71 | A tutorial of wind turbine control for supporting grid frequency through active power control. , 2012, , . | | 164 |
| 72 | Combining droop curve concepts with control systems for wind turbine active power control. , 2012, , . | | 28 |

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| 73 | Positivity Preservation Properties of the Rantzer Multipliers. IEEE Transactions on Automatic Control, 2011, 56, 190-194. | 3.6 | 7 |
| 74 | Simultaneous numerical optimization for data association and parameter estimation. , 2011, , . | | 2 |
| 75 | Adding feedforward blade pitch control to standard feedback controllers for load mitigation in wind turbines. Mechatronics, 2011, 21, 682-690. | 2.0 | 80 |
| 76 | On stability analysis of systems featuring a multiplicative combination of nonlinear and linear time-invariant feedback. International Journal of Robust and Nonlinear Control, 2011, 21, 2101-2108. | 2.1 | 3 |
| 77 | The use of preview wind measurements for blade pitch control. Mechatronics, 2011, 21, 668-681. | 2.0 | 74 |
| 78 | Trajectory optimization estimator for impulsive data association. , 2011, , . | | 2 |
| 79 | A comparison of ILC architectures for nanopositioners with applications to AFM raster tracking. , 2011, , . | | 11 |
| 80 | Comparison of wind turbine operating transitions through the use of iterative learning control. , 2011, , . | | 12 |
| 81 | Nonminimum phase adaptive inverse control for settle performance applications. Mechatronics, 2010, 20, 35-44. | 2.0 | 30 |
| 82 | Stochastic sampling based data association. , 2010, , . | | 0 |
| 83 | Adaptive-delay combined feedforward/feedback control for raster tracking with applications to AFMs. , 2010, , . | | 8 |
| 84 | Impulse optimization for data association. , 2010, , . | | 5 |
| 85 | Combining Standard Feedback Controllers with Feedforward Blade Pitch Control for Load Mitigation in Wind Turbines. , 2010, , . | | 45 |
| 86 | Blade Pitch Control with Preview Wind Measurements. , 2010, , . | | 42 |
| 87 | Regulating web tension in tape systems with time-varying radii. , 2009, , . | | 5 |
| 88 | A comparison of control architectures for atomic force microscopes. Asian Journal of Control, 2009, 11, 175-181. | 1.9 | 59 |
| 89 | Nonminimum Phase Dynamic Inversion for Settle Time Applications. IEEE Transactions on Control Systems Technology, 2009, 17, 989-1005. | 3.2 | 108 |
| 90 | A tutorial on the dynamics and control of wind turbines and wind farms. , 2009, , . | | 244 |

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| 91 | Control of wind turbines: Past, present, and future. , 2009, , . | | 164 |
| 92 | Combined Feed-forward/Feedback Control of Wind Turbines to Reduce Blade Flap Bending Moments. , 2009, , . | | 26 |
| 93 | Adaptive inverse control for settling performance improvements. , 2009, , . | | 4 |
| 94 | Proximate Time-Optimal Digital Control for Synchronous Buck DC–DC Converters. IEEE Transactions on Power Electronics, 2008, 23, 2018-2026. | 5.4 | 172 |
| 95 | Data association with ambiguous measurements. , 2008, , . | | 0 |
| 96 | The effect of nonminimum-phase zero locations on the performance of feedforward model-inverse control techniques in discrete-time systems. , 2008, , . | | 62 |
| 97 | Feedforward control to attenuate tension error in time-varying tape systems. , 2008, , . | | 2 |
| 98 | Architectures for Tracking Control in Atomic Force Microscopes. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 8236-8250. | 0.4 | 14 |
| 99 | Robust Control of Nonlinear Tape Transport Systems With and Without Tension Sensors. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2007, 129, 41-55. | 0.9 | 17 |
| 100 | Combined Feedforward/Feedback Control of Atomic Force Microscopes. Proceedings of the American Control Conference, 2007, , . | 0.0 | 49 |
| 101 | A Tutorial on the Mechanisms, Dynamics, and Control of Atomic Force Microscopes. Proceedings of the American Control Conference, 2007, , . | 0.0 | 154 |
| 102 | Discrete time-optimal command shaping. Automatica, 2007, 43, 1403-1409. | 3.0 | 44 |
| 103 | Model Inversion Architectures for Settle Time Applications with Uncertainty. , 2006, , . | | 14 |
| 104 | Methods for Increasing Region 2 Power Capture on a Variable-Speed Wind Turbine. Journal of Solar Energy Engineering, Transactions of the ASME, 2004, 126, 1092-1100. | 1.1 | 136 |
| 105 | Shaped Time-Optimal Feedback Controllers for Flexible Structures. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2004, 126, 173-186. | 0.9 | 29 |
| 106 | Adaptive input shaping for maneuvering flexible structures. Automatica, 2004, 40, 685-693. | 3.0 | 75 |
| 107 | Synergistic visual/haptic rendering modes for scientific visualization. IEEE Computer Graphics and Applications, 2004, 24, 22-30. | 1.0 | 22 |
| 108 | Input shaping and time-optimal control of flexible structures. Automatica, 2003, 39, 893-900. | 3.0 | 33 |

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| 109 | On Frequency-Domain and Time-Domain Input Shaping for Multi-Mode Flexible Structures. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2003, 125, 494-497. | 0.9 | 8 |
| 110 | Robust Input Shaper Control Design for Parameter Variations in Flexible Structures. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2000, 122, 63-70. | 0.9 | 63 |
| 111 | Multi-input shaping design for vibration reduction. Automatica, 1999, 35, 81-89. | 3.0 | 68 |
| 112 | Robust minimum time control of flexible structures. Automatica, 1998, 34, 229-236. | 3.0 | 40 |
| 113 | Alternatives to Monte-Carlo simulation evaluations of two multisensor fusion algorithms. Automatica, 1998, 34, 103-110. | 3.0 | 24 |
| 114 | Analysis of the Frequency, Damping, and Total Insensitivities of Input Shaping Designs. Journal of Guidance, Control, and Dynamics, 1997, 20, 909-915. | 1.6 | 18 |
| 115 | Verifying Robust Time-Optimal Commands for Multimode Flexible Spacecraft. Journal of Guidance, Control, and Dynamics, 1997, 20, 831-833. | 1.6 | 29 |
| 116 | Minimum-time control characteristics of flexible structures. Journal of Guidance, Control, and Dynamics, 1996, 19, 123-129. | 1.6 | 78 |
| 117 | Multisensor multitarget mixture reduction algorithms for tracking. Journal of Guidance, Control, and Dynamics, 1994, 17, 1205-1211. | 1.6 | 53 |