

Bri-Mathias S Hodge

List of Publications by Year in descending order

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134
papers

7,540
citations

71102

41
h-index

58581

82
g-index

143
all docs

143
docs citations

143
times ranked

7280
citing authors

#	ARTICLE	IF	CITATIONS
1	A Multi-Stage Stochastic Risk Assessment With Markovian Representation of Renewable Power. IEEE Transactions on Sustainable Energy, 2022, 13, 414-426.	8.8	6
2	Hierarchical Control of Utility-Scale Solar PV Plants for Mitigation of Generation Variability and Ancillary Service Provision. IEEE Transactions on Sustainable Energy, 2022, 13, 1383-1395.	8.8	8
3	A review of behind-the-meter solar forecasting. Renewable and Sustainable Energy Reviews, 2022, 160, 112224.	16.4	21
4	Investigation of stochastic unit commitment to enable advanced flexibility measures for high shares of solar PV. Applied Energy, 2022, 321, 119337.	10.1	4
5	Continuous-time echo state networks for predicting power system dynamics. Electric Power Systems Research, 2022, 212, 108562.	3.6	5
6	Probabilistic Solar Power Forecasting Using Bayesian Model Averaging. IEEE Transactions on Sustainable Energy, 2021, 12, 325-337.	8.8	45
7	Optimal design of solar-driven electrolytic hydrogen production systems within electricity markets. Journal of Power Sources, 2021, 483, 229183.	7.8	39
8	Coordinated operation of electricity and natural gas systems from day-ahead to real-time markets. Journal of Cleaner Production, 2021, 281, 124759.	9.3	9
9	Bulk Electric Power System Risks From Coordinated Edge Devices. IEEE Open Access Journal of Power and Energy, 2021, 8, 35-44.	3.4	3
10	Open-Source PSCAD Grid-Following and Grid-Forming Inverters and A Benchmark for Zero-Inertia Power System Simulations. , 2021, , .		26
11	Assessing the Accuracy of Balanced Power System Models in the Presence of Voltage Unbalance. , 2021, , .		0
12	Framework for optimization of long-term, multi-period investment planning of integrated urban energy systems. Applied Energy, 2021, 292, 116880.	10.1	10
13	The challenges of achieving a 100% renewable electricity system in the United States. Joule, 2021, 5, 1331-1352.	24.0	99
14	Process modeling, techno-economic assessment, and life cycle assessment of the electrochemical reduction of CO ₂ : a review. IScience, 2021, 24, 102813.	4.1	59
15	Voltage Estimation in Low-Voltage Distribution Grids With Distributed Energy Resources. IEEE Transactions on Sustainable Energy, 2021, 12, 1640-1650.	8.8	17
16	Simulating wind power forecast error distributions for spatially aggregated wind power plants. Wind Energy, 2020, 23, 45-62.	4.2	9
17	Review of wind generation within adequacy calculations and capacity markets for different power systems. Renewable and Sustainable Energy Reviews, 2020, 119, 109540.	16.4	47
18	Deliverable Flexible Ramping Products Considering Spatiotemporal Correlation of Wind Generation and Demand Uncertainties. IEEE Transactions on Power Systems, 2020, 35, 2561-2574.	6.5	29

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19	A review of power system planning and operational models for flexibility assessment in high solar energy penetration scenarios. <i>Solar Energy</i> , 2020, 210, 169-180.	6.1	44
20	Grid-Following Inverters and Synchronous Condensers: A Grid-Forming Pair?. , 2020, , .		12
21	Coupled transmission and distribution simulations to assess distributed generation response to power system faults. <i>Electric Power Systems Research</i> , 2020, 189, 106746.	3.6	15
22	Computational experiment design for operations model simulation. <i>Electric Power Systems Research</i> , 2020, 189, 106680.	3.6	7
23	Addressing technical challenges in 100% variable inverter-based renewable energy power systems. <i>Wiley Interdisciplinary Reviews: Energy and Environment</i> , 2020, 9, e376.	4.1	47
24	The value of seasonal energy storage technologies for the integration of wind and solar power. <i>Energy and Environmental Science</i> , 2020, 13, 1909-1922.	30.8	126
25	Building Large-Scale U.S. Synthetic Electric Distribution System Models. <i>IEEE Transactions on Smart Grid</i> , 2020, 11, 5301-5313.	9.0	33
26	Stability and control of power systems with high penetrations of inverter-based resources: An accessible review of current knowledge and open questions. <i>Solar Energy</i> , 2020, 210, 149-168.	6.1	55
27	A clustering-based scenario generation framework for power market simulation with wind integration. <i>Journal of Renewable and Sustainable Energy</i> , 2020, 12, 036301.	2.0	14
28	Benchmark probabilistic solar forecasts: Characteristics and recommendations. <i>Solar Energy</i> , 2020, 206, 52-67.	6.1	31
29	Valuing intra-day coordination of electric power and natural gas system operations. <i>Energy Policy</i> , 2020, 141, 111470.	8.8	11
30	Phase-selection algorithms to minimize cost and imbalance in U.S. synthetic distribution systems. <i>International Journal of Electrical Power and Energy Systems</i> , 2020, 120, 106042.	5.5	13
31	Distributed PV generation estimation using multi-rate and event-driven Kalman kriging filter. <i>IET Smart Grid</i> , 2020, 3, 538-546.	2.2	1
32	A Data-driven Method for Adaptive Reserve Requirement Estimation via Probabilistic Net Load Forecasting. , 2020, , .		3
33	A Copula-Based Conditional Probabilistic Forecast Model for Wind Power Ramps. <i>IEEE Transactions on Smart Grid</i> , 2019, 10, 3870-3882.	9.0	53
34	Cost Competitiveness of Electrolytic Hydrogen. <i>Joule</i> , 2019, 3, 2425-2443.	24.0	141
35	Toward a subhourly net zero energy district design through integrated building and distribution system modeling. <i>Journal of Renewable and Sustainable Energy</i> , 2019, 11, .	2.0	11
36	OpenSolar: Promoting the openness and accessibility of diverse public solar datasets. <i>Solar Energy</i> , 2019, 188, 1369-1379.	6.1	27

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37	Analysis of Hybrid Smart Grid Communication Network Designs for Distributed Energy Resources Coordination. , 2019, , .		11
38	Quantifying the Opportunity Limits of Automatic Residential Electric Load Shaping. Energies, 2019, 12, 3204.	3.1	0
39	A two-step short-term probabilistic wind forecasting methodology based on predictive distribution optimization. Applied Energy, 2019, 238, 1497-1505.	10.1	40
40	Adjustable and distributionally robust chance-constrained economic dispatch considering wind power uncertainty. Journal of Modern Power Systems and Clean Energy, 2019, 7, 658-664.	5.4	15
41	Integrated distribution system and urban district planning with high renewable penetrations. Wiley Interdisciplinary Reviews: Energy and Environment, 2019, 8, e339.	4.1	11
42	Including operational aspects in the planning of power systems with large amounts of variable generation: A review of modeling approaches. Wiley Interdisciplinary Reviews: Energy and Environment, 2019, 8, e341.	4.1	46
43	Decentralized wind uncertainty management: Alternating direction method of multipliers based distributionally-robust chance constrained optimal power flow. Applied Energy, 2019, 239, 938-947.	10.1	40
44	Optimal placement of data concentrators for expansion of the smart grid communications network. IET Smart Grid, 2019, 2, 537-548.	2.2	6
45	Linear Approximation Line Pack Model for Integrated Electricity and Natural Gas Systems OPF. , 2019, , .		4
46	The Role of Concentrating Solar Power Toward High Renewable Energy Penetrated Power Systems. , 2019, , .		1
47	Multiscale Multiobjective Systems Analysis (MiMoSA): an advanced metabolic modeling framework for complex systems. Scientific Reports, 2019, 9, 16948.	3.3	11
48	Characterizing forecastability of wind sites in the United States. Renewable Energy, 2019, 133, 1352-1365.	8.9	18
49	Introducing Uncertainty Components in Locational Marginal Prices for Pricing Wind Power and Load Uncertainties. IEEE Transactions on Power Systems, 2019, 34, 2013-2024.	6.5	70
50	A Data-Driven Methodology for Probabilistic Wind Power Ramp Forecasting. IEEE Transactions on Smart Grid, 2019, 10, 1326-1338.	9.0	68
51	A Solar Time Based Analog Ensemble Method for Regional Solar Power Forecasting. IEEE Transactions on Sustainable Energy, 2019, 10, 268-279.	8.8	136
52	Consequences of neglecting the interannual variability of the solar resource: A case study of photovoltaic power among the Hawaiian Islands. Solar Energy, 2018, 167, 61-75.	6.1	21
53	The combined value of wind and solar power forecasting improvements and electricity storage. Applied Energy, 2018, 214, 1-15.	10.1	76
54	Economic justification of concentrating solar power in high renewable energy penetrated power systems. Applied Energy, 2018, 222, 649-661.	10.1	76

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55	An Extended IEEE 118-Bus Test System With High Renewable Penetration. IEEE Transactions on Power Systems, 2018, 33, 281-289.	6.5	146
56	A Methodology for Quantifying Reliability Benefits From Improved Solar Power Forecasting in Multi-Timescale Power System Operations. IEEE Transactions on Smart Grid, 2018, 9, 6897-6908.	9.0	29
57	Wind and solar resource data sets. Wiley Interdisciplinary Reviews: Energy and Environment, 2018, 7, e276.	4.1	13
58	Capacity Market Model Considering Flexible Resource Requirements. , 2018, , .		5
59	Integrated Energy Planning with a High Share of Variable Renewable Energy Sources for a Caribbean Island. Energies, 2018, 11, 2193.	3.1	31
60	Potential of Wind Power to Provide Flexible Ramping Products and Operating Reserve. , 2018, , .		5
61	Simulation-based Parameter Optimization Framework for Large-Scale Hybrid Smart Grid Communications Systems Design. , 2018, , .		1
62	A review of the potential impacts of climate change on bulk power system planning and operations in the United States. Renewable and Sustainable Energy Reviews, 2018, 98, 255-267.	16.4	67
63	A stochastic downscaling approach for generating high-frequency solar irradiance scenarios. Solar Energy, 2018, 176, 370-379.	6.1	19
64	Modelling wind power spatial-temporal correlation in multi-interval optimal power flow: A sparse correlation matrix approach. Applied Energy, 2018, 230, 531-539.	10.1	37
65	Annually and monthly resolved solar irradiance and atmospheric temperature data across the Hawaiian archipelago from 1998 to 2015 with interannual summary statistics. Data in Brief, 2018, 19, 896-920.	1.0	3
66	Projecting solar photovoltaic efficiencies from lab to market. , 2018, , .		5
67	Net-zero emissions energy systems. Science, 2018, 360, .	12.6	1,165
68	Hybrid Communication Architectures for Distributed Smart Grid Applications. Energies, 2018, 11, 871.	3.1	27
69	Mean-Variance Optimization-Based Energy Storage Scheduling Considering Day-Ahead and Real-Time LMP Uncertainties. IEEE Transactions on Power Systems, 2018, 33, 7292-7295.	6.5	37
70	A retrospective analysis of the market price response to distributed photovoltaic generation in California. Energy Policy, 2018, 121, 394-403.	8.8	10
71	Hybrid component and configuration model for combined-cycle units in unit commitment problem. Journal of Modern Power Systems and Clean Energy, 2018, 6, 1332-1337.	5.4	6
72	The Role of Concentrating Solar Power Toward High Renewable Energy Penetrated Power Systems. IEEE Transactions on Power Systems, 2018, 33, 6630-6641.	6.5	183

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73	Probabilistic Short-term Wind Forecasting Based on Pinball Loss Optimization. , 2018, , .		5
74	A data-driven multi-model methodology with deep feature selection for short-term wind forecasting. Applied Energy, 2017, 190, 1245-1257.	10.1	253
75	Achieving a 100% Renewable Grid: Operating Electric Power Systems with Extremely High Levels of Variable Renewable Energy. IEEE Power and Energy Magazine, 2017, 15, 61-73.	1.6	846
76	Characterizing and analyzing ramping events in wind power, solar power, load, and netload. Renewable Energy, 2017, 111, 227-244.	8.9	61
77	Dynamic Price Vector Formation Model-Based Automatic Demand Response Strategy for PV-Assisted EV Charging Stations. IEEE Transactions on Smart Grid, 2017, 8, 2903-2915.	9.0	208
78	Empirical Investigations of the Opportunity Limits of Automatic Residential Electric Load Shaping. , 2017, , .		3
79	Enhancing Power System Operational Flexibility With Flexible Ramping Products: A Review. IEEE Transactions on Industrial Informatics, 2017, 13, 1652-1664.	11.3	167
80	Stochastic Multi-Timescale Power System Operations With Variable Wind Generation. IEEE Transactions on Power Systems, 2017, 32, 3325-3337.	6.5	56
81	Wind-Friendly Flexible Ramping Product Design in Multi-Timescale Power System Operations. IEEE Transactions on Sustainable Energy, 2017, 8, 1064-1075.	8.8	69
82	A distributed middleware architecture for attack-resilient communications in smart grids. , 2017, , .		4
83	IGMS: An Integrated ISO-to-Appliance Scale Grid Modeling System. IEEE Transactions on Smart Grid, 2017, 8, 1525-1534.	9.0	44
84	Characterizing Time Series Data Diversity for Wind Forecasting. , 2017, , .		7
85	Optimal capacitor bank capacity and placement in distribution systems with high distributed solar power penetration. , 2017, , .		5
86	Short-term global horizontal irradiance forecasting based on sky imaging and pattern recognition. , 2017, , .		12
87	Quantifying the economic and grid reliability impacts of improved wind power forecasting. , 2017, , .		3
88	Probabilistic wind power ramp forecasting based on a scenario generation method. , 2017, , .		8
89	A Review of Power Distribution Test Feeders in the United States and the Need for Synthetic Representative Networks. Energies, 2017, 10, 1896.	3.1	66
90	Towards Improved Understanding of the Applicability of Uncertainty Forecasts in the Electric Power Industry. Energies, 2017, 10, 1402.	3.1	75

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91	Probability Density Function Characterization for Aggregated Large-Scale Wind Power Based on Weibull Mixtures. Energies, 2016, 9, 91.	3.1	21
92	An Attack-Resilient Middleware Architecture for Grid Integration of Distributed Energy Resources. , 2016, , .		3
93	Investigating the impact of wind turbines on distribution system stability. , 2016, , .		1
94	Automatic regionalization algorithm for distributed state estimation in power systems. , 2016, , .		2
95	The impact of wind power on electricity prices. Renewable Energy, 2016, 94, 474-487.	8.9	121
96	Quantifying the Economic and Grid Reliability Impacts of Improved Wind Power Forecasting. IEEE Transactions on Sustainable Energy, 2016, 7, 1525-1537.	8.8	82
97	Impacts of short-term solar power forecasts in system operations. , 2016, , .		4
98	Analyzing the impacts of increased wind power on generation Revenue Sufficiency. , 2016, , .		9
99	The value of improved wind power forecasting: Grid flexibility quantification, ramp capability analysis, and impacts of electricity market operation timescales. Applied Energy, 2016, 184, 696-713.	10.1	56
100	Analyzing the Impact of Solar Power on Multi-hourly Thermal Generator Ramping. , 2016, , .		13
101	The value of day-ahead solar power forecasting improvement. Solar Energy, 2016, 129, 192-203.	6.1	143
102	Machine learning based multi-physical-model blending for enhancing renewable energy forecast - improvement via situation dependent error correction. , 2015, , .		31
103	Solar Power Ramp Events Detection Using an Optimized Swinging Door Algorithm. , 2015, , .		9
104	Recent Trends in Variable Generation Forecasting and Its Value to the Power System. IEEE Transactions on Sustainable Energy, 2015, 6, 924-933.	8.8	81
105	The Wind Integration National Dataset (WIND) Toolkit. Applied Energy, 2015, 151, 355-366.	10.1	394
106	An assessment of the impact of stochastic day-ahead SCUC on economic and reliability metrics at multiple timescales. , 2015, , .		5
107	Joint Probability Distribution and Correlation Analysis of Wind and Solar Power Forecast Errors in the Western Interconnection. Journal of Energy Engineering - ASCE, 2015, 141, .	1.9	18
108	Comparison of numerical weather prediction based deterministic and probabilistic wind resource assessment methods. Applied Energy, 2015, 156, 528-541.	10.1	88

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109	Integrating solar PV (photovoltaics) in utility system operations: Analytical framework and Arizona case study. <i>Energy</i> , 2015, 85, 1-9.	8.8	64
110	The policy and institutional challenges of grid integration of renewable energy in the western United States. <i>Utilities Policy</i> , 2015, 33, 34-41.	4.0	20
111	Wind Power Ramp Event Forecasting Using a Stochastic Scenario Generation Method. <i>IEEE Transactions on Sustainable Energy</i> , 2015, 6, 422-433.	8.8	134
112	Baseline and target values for PV forecasts: Toward improved solar power forecasting. , 2015, , .		2
113	Baseline and target values for regional and point PV power forecasts: Toward improved solar forecasting. <i>Solar Energy</i> , 2015, 122, 804-819.	6.1	60
114	A suite of metrics for assessing the performance of solar power forecasting. <i>Solar Energy</i> , 2015, 111, 157-175.	6.1	168
115	Analyzing Effects of Turbulence on Power Generation Using Wind Plant Monitoring Data. , 2014, , .		0
116	A hybrid measure-correlate-predict method for long-term wind condition assessment. <i>Energy Conversion and Management</i> , 2014, 87, 697-710.	9.2	20
117	Ramp Forecasting Performance From Improved Short-Term Wind Power Forecasting. , 2014, , .		20
118	Forecastability as a Design Criterion in Wind Resource Assessment. <i>Computer Aided Chemical Engineering</i> , 2014, 34, 663-668.	0.5	1
119	Short-Term Load Forecast Error Distributions and Implications for Renewable Integration Studies. , 2013, , .		37
120	Investigating the Correlation Between Wind and Solar Power Forecast Errors in the Western Interconnection. , 2013, , .		16
121	Assessing Long-Term Wind Conditions by Combining Different Measure-Correlate-Predict Algorithms. , 2013, , .		6
122	Characterizing and Modeling Wind Power Forecast Errors from Operational Systems for Use in Wind Integration Planning Studies. <i>Wind Engineering</i> , 2012, 36, 509-524.	1.9	28
123	Assessment of Simulated Wind Data Requirements for Wind Integration Studies. <i>IEEE Transactions on Sustainable Energy</i> , 2012, 3, 620-626.	8.8	22
124	Operational Analysis and Methods for Wind Integration Studies. <i>IEEE Transactions on Sustainable Energy</i> , 2012, 3, 612-619.	8.8	19
125	The effects of electric vehicles on residential households in the city of Indianapolis. <i>Energy Policy</i> , 2012, 49, 442-455.	8.8	21
126	The effects of vehicle-to-grid systems on wind power integration. <i>Wind Energy</i> , 2012, 15, 903-914.	4.2	7

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127	Multi-Paradigm Modeling of the Effects of PHEV Adoption on Electric Utility Usage Levels and Emissions. <i>Industrial & Engineering Chemistry Research</i> , 2011, 50, 5191-5203.	3.7	14
128	Wind power forecasting error distributions over multiple timescales. , 2011, , .		178
129	Integration of Variable Generation, Cost-Causation, and Integration Costs. <i>Electricity Journal</i> , 2011, 24, 51-63.	2.5	90
130	Operating reserve policies with high wind power penetration. <i>Computers and Chemical Engineering</i> , 2011, 35, 1876-1885.	3.8	33
131	A multi-paradigm modeling framework for energy systems simulation and analysis. <i>Computers and Chemical Engineering</i> , 2011, 35, 1725-1737.	3.8	28
132	The effects of electricity pricing on PHEV competitiveness. <i>Energy Policy</i> , 2011, 39, 1552-1561.	8.8	51
133	A Multi-Paradigm Energy Model for Liquid Natural Gas Analysis. , 2009, , 1-9.		2
134	A nonstationary and non-Gaussian moving average model for solar irradiance. <i>Environmetrics</i> , 0, , .	1.4	2