

# Kai Sun

## List of Publications by Citations

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159  
papers

2,993  
citations

29  
h-index

49  
g-index

187  
ext. papers

3,830  
ext. citations

5.7  
avg, IF

5.75  
L-index

#	Paper	IF	Citations
159	An Online Dynamic Security Assessment Scheme Using Phasor Measurements and Decision Trees. <i>IEEE Transactions on Power Systems</i> , <b>2007</b> , 22, 1935-1943	7	224
158	Splitting strategies for islanding operation of large-scale power systems using OBDD-based methods. <i>IEEE Transactions on Power Systems</i> , <b>2003</b> , 18, 912-923	7	178
157	Decision Tree-Based Online Voltage Security Assessment Using PMU Measurements. <i>IEEE Transactions on Power Systems</i> , <b>2009</b> , 24, 832-839	7	164
156	A study of system splitting strategies for island operation of power system: a two-phase method based on OBDDs. <i>IEEE Transactions on Power Systems</i> , <b>2003</b> , 18, 1556-1565	7	112
155	. <i>IEEE Transactions on Power Systems</i> , <b>2014</b> , 29, 717-730	7	108
154	Optimal PMU Placement for Power System Dynamic State Estimation by Using Empirical Observability Gramian. <i>IEEE Transactions on Power Systems</i> , <b>2015</b> , 30, 2041-2054	7	107
153	An Interaction Model for Simulation and Mitigation of Cascading Failures. <i>IEEE Transactions on Power Systems</i> , <b>2015</b> , 30, 804-819	7	91
152	Initial review of methods for cascading failure analysis in electric power transmission systems IEEE PES CAMS task force on understanding, prediction, mitigation and restoration of cascading failures <b>2008</b> ,		90
151	A simulation study of OBDD-based proper splitting strategies for power systems under consideration of transient stability. <i>IEEE Transactions on Power Systems</i> , <b>2005</b> , 20, 389-399	7	87
150	Computation of Milestones for Decision Support During System Restoration. <i>IEEE Transactions on Power Systems</i> , <b>2011</b> , 26, 1399-1409	7	77
149	Dynamic State Estimation for Multi-Machine Power System by Unscented Kalman Filter With Enhanced Numerical Stability. <i>IEEE Transactions on Smart Grid</i> , <b>2018</b> , 9, 1184-1196	10.7	72
148	. <i>IEEE Transactions on Power Systems</i> , <b>2016</b> , 31, 2787-2798	7	57
147	A test cases library for methods locating the sources of sustained oscillations <b>2016</b> ,		53
146	. <i>IEEE Transactions on Power Systems</i> , <b>2011</b> , 26, 1544-1554	7	52
145	OBDD-Based Sectionalizing Strategies for Parallel Power System Restoration. <i>IEEE Transactions on Power Systems</i> , <b>2011</b> , 26, 1426-1433	7	52
144	A Phase Locked Loop-Based Approach to Real-Time Modal Analysis on Synchrophasor Measurements. <i>IEEE Transactions on Smart Grid</i> , <b>2014</b> , 5, 260-269	10.7	44
143	A Multi-Timescale Quasi-Dynamic Model for Simulation of Cascading Outages. <i>IEEE Transactions on Power Systems</i> , <b>2016</b> , 31, 3189-3201	7	43

142	Optimization of Battery Energy Storage to Improve Power System Oscillation Damping. <i>IEEE Transactions on Sustainable Energy</i> , <b>2019</b> , 10, 1015-1024	8.2	40
141	Location methods of oscillation sources in power systems: a survey. <i>Journal of Modern Power Systems and Clean Energy</i> , <b>2017</b> , 5, 151-159	4	40
140	Mixed-Integer Linear Programming-Based Splitting Strategies for Power System Islanding Operation Considering Network Connectivity. <i>IEEE Systems Journal</i> , <b>2018</b> , 12, 350-359	4.3	39
139	Searching for feasible splitting strategies of controlled system islanding. <i>IET Generation, Transmission and Distribution</i> , <b>2006</b> , 153, 89		36
138	Risk Assessment of Multi-Timescale Cascading Outages Based on Markovian Tree Search. <i>IEEE Transactions on Power Systems</i> , <b>2017</b> , 32, 2887-2900	7	34
137	Formulation and Characterization of Power System Electromechanical Oscillations. <i>IEEE Transactions on Power Systems</i> , <b>2016</b> , 31, 5082-5093	7	33
136	Multi-Layer Interaction Graph for Analysis and Mitigation of Cascading Outages. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , <b>2017</b> , 7, 239-249	5.2	32
135	A Novel Generation Rescheduling Algorithm to Improve Power System Reliability With High Renewable Energy Penetration. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 3349-3357	7	31
134	A Multi-Dimensional Holomorphic Embedding Method to Solve AC Power Flows. <i>IEEE Access</i> , <b>2017</b> , 5, 25270-25285	3.5	31
133	Online Voltage Stability Assessment for Load Areas Based on the Holomorphic Embedding Method. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 3720-3734	7	30
132	Vulnerability assessment for cascading failures in electric power systems <b>2009</b> ,		30
131	Decision tree assisted controlled islanding for preventing cascading events <b>2009</b> ,		29
130	. <i>IEEE Transactions on Power Systems</i> , <b>2007</b> , 22, 433-441	7	28
129	Multi-Stage Holomorphic Embedding Method for Calculating the Power-Voltage Curve. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 1127-1129	7	26
128	Power system observability and dynamic state estimation for stability monitoring using synchrophasor measurements. <i>Control Engineering Practice</i> , <b>2016</b> , 53, 160-172	3.9	26
127	Design and implementation of a measurement-based adaptive wide-area damping controller considering time delays. <i>Electric Power Systems Research</i> , <b>2016</b> , 130, 1-9	3.5	25
126	An Adaptive Power System Equivalent for Real-Time Estimation of Stability Margin Using Phase-Plane Trajectories. <i>IEEE Transactions on Power Systems</i> , <b>2011</b> , 26, 915-923	7	25
125	A measurement-based power system model for dynamic response estimation and instability warning. <i>Electric Power Systems Research</i> , <b>2015</b> , 124, 1-9	3.5	24

124	Advanced power system partitioning method for fast and reliable restoration: toward a self-healing power grid. <i>IET Generation, Transmission and Distribution</i> , <b>2018</b> , 12, 42-52	2.5	24
123	Adaptive Nonlinear Model Reduction for Fast Power System Simulation. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 6746-6754	7	24
122	Simulation of Cascading Outages Using a Power-Flow Model Considering Frequency. <i>IEEE Access</i> , <b>2018</b> , 6, 37784-37795	3.5	23
121	. <i>IEEE Transactions on Power Systems</i> , <b>2017</b> , 32, 430-441	7	22
120	Voltage Stability Analysis of Power Systems With Induction Motors Based on Holomorphic Embedding. <i>IEEE Transactions on Power Systems</i> , <b>2019</b> , 34, 1278-1288	7	22
119	Damping control for a target oscillation mode using battery energy storage. <i>Journal of Modern Power Systems and Clean Energy</i> , <b>2018</b> , 6, 833-845	4	21
118	Estimating the Propagation of Interdependent Cascading Outages With Multi-Type Branching Processes. <i>IEEE Transactions on Power Systems</i> , <b>2016</b> , 1-1	7	21
117	Measurement-based correlation approach for power system dynamic response estimation. <i>IET Generation, Transmission and Distribution</i> , <b>2015</b> , 9, 1474-1484	2.5	20
116	. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 5913-5922	7	19
115	Efficient Estimation of Component Interactions for Cascading Failure Analysis by EM Algorithm. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 3153-3161	7	18
114	A measurement-based approach for power system instability early warning. <i>Protection and Control of Modern Power Systems</i> , <b>2016</b> , 1,	6.7	18
113	Probabilistic Power Flow Analysis Using Multidimensional Holomorphic Embedding and Generalized Cumulants. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 7132-7142	7	18
112	Optimal Allocation of Dynamic Var Sources Using the Voronoi Diagram Method Integrating Linear Programing. <i>IEEE Transactions on Power Systems</i> , <b>2017</b> , 32, 4644-4655	7	17
111	Optimal Placement of Dynamic Var Sources by Using Empirical Controllability Covariance. <i>IEEE Transactions on Power Systems</i> , <b>2017</b> , 32, 240-249	7	16
110	Power System Time Domain Simulation Using a Differential Transformation Method. <i>IEEE Transactions on Power Systems</i> , <b>2019</b> , 34, 3739-3748	7	16
109	Distribution network reconfiguration comprehensively considering N-1 security and network loss. <i>IET Generation, Transmission and Distribution</i> , <b>2018</b> , 12, 1721-1728	2.5	15
108	An adaptive three-bus power system equivalent for estimating voltage stability margin from synchronized phasor measurements <b>2014</b> ,		14
107	An Online Search Method for Representative Risky Fault Chains Based on Reinforcement Learning and Knowledge Transfer. <i>IEEE Transactions on Power Systems</i> , <b>2020</b> , 35, 1856-1867	7	14

106	Solving Power System Differential Algebraic Equations Using Differential Transformation. <i>IEEE Transactions on Power Systems</i> , <b>2020</b> , 35, 2289-2299	7	13
105	Mathematical Base and Deduction of Security Region for Distribution Systems With DER. <i>IEEE Transactions on Smart Grid</i> , <b>2019</b> , 10, 2892-2903	10.7	13
104	Toward Simulation and Risk Assessment of Weather-Related Outages. <i>IEEE Transactions on Smart Grid</i> , <b>2019</b> , 10, 4391-4400	10.7	12
103	A TimePower Series-Based Semi-Analytical Approach for Power System Simulation. <i>IEEE Transactions on Power Systems</i> , <b>2019</b> , 34, 841-851	7	12
102	Efficient and Robust Dynamic Simulation of Power Systems With Holomorphic Embedding. <i>IEEE Transactions on Power Systems</i> , <b>2020</b> , 35, 938-949	7	12
101	Image Embedding of PMU Data for Deep Learning Towards Transient Disturbance Classification <b>2018</b> ,		12
100	Efficient Simulation of Temperature Evolution of Overhead Transmission Lines Based on Analytical Solution and NWP. <i>IEEE Transactions on Power Delivery</i> , <b>2018</b> , 33, 1576-1588	4.3	11
99	Application of synchrophasor measurements for improving operator situational awareness <b>2011</b> ,		11
98	A decision tree based approach for microgrid islanding detection <b>2015</b> ,		10
97	Nonlinear Modal Decoupling of Multi-Oscillator Systems With Applications to Power Systems. <i>IEEE Access</i> , <b>2018</b> , 6, 9201-9217	3.5	10
96	Application of the adomian decomposition method for semi-analytic solutions of power system differential algebraic equations <b>2015</b> ,		10
95	Characterization of Subsynchronous Oscillation with Wind Farms Using Describing Function and Generalized Nyquist Criterion. <i>IEEE Transactions on Power Systems</i> , <b>2020</b> , 35, 2783-2793	7	10
94	Mixed Integer Second Order Cone Relaxation With Dynamic Simulation for Proper Power System Islanding Operations. <i>IEEE Journal on Emerging and Selected Topics in Circuits and Systems</i> , <b>2017</b> , 7, 295-306	5.2	9
93	Voronoi diagram based optimization of dynamic reactive power sources <b>2015</b> ,		9
92	. <i>IEEE Open Access Journal of Power and Energy</i> , <b>2020</b> , 7, 489-500	3.8	9
91	Applying reduced generator models in the coarse solver of parareal in time parallel power system simulation <b>2016</b> ,		9
90	Mitigation of Cascading Outages Using a Dynamic Interaction Graph-Based Optimal Power Flow Model. <i>IEEE Access</i> , <b>2019</b> , 7, 168637-168648	3.5	9
89	Microgrid security assessment and islanding control by Support Vector Machine <b>2015</b> ,		8

88	Second-order oscillation mode study of hydropower system based on linear elastic model and modal series method. <i>International Transactions on Electrical Energy Systems</i> , <b>2017</b> , 27, e2233	2.2	8
87	Properties of the Frequency Amplitude Curve. <i>IEEE Transactions on Power Systems</i> , <b>2017</b> , 32, 826-827	7	7
86	A decoupling based direct method for power system transient stability analysis <b>2015</b> ,		7
85	Optimal Distributed Generator Placement in Utility-Based Microgrids During a Large-Scale Grid Disturbance. <i>IEEE Access</i> , <b>2020</b> , 8, 21333-21344	3.5	7
84	Measurement based power system dynamics prediction with multivariate AutoRegressive Model <b>2014</b> ,		7
83	Measurement-based voltage stability assessment for load areas addressing n contingencies. <i>IET Generation, Transmission and Distribution</i> , <b>2017</b> , 11, 3731-3738	2.5	7
82	A systematic approach for dynamic security assessment and the corresponding preventive control scheme based on decision trees <b>2014</b> ,		7
81	Vectorized Efficient Computation of Pad Approximation for Semi-Analytical Simulation of Large-Scale Power Systems. <i>IEEE Transactions on Power Systems</i> , <b>2019</b> , 34, 3957-3959	7	6
80	Management of Cascading Outage Risk Based on Risk Gradient and Markovian Tree Search. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 4050-4060	7	6
79	Nonlinear Modal Decoupling Based Power System Transient Stability Analysis. <i>IEEE Transactions on Power Systems</i> , <b>2019</b> , 34, 4889-4899	7	6
78	Optimisation of dynamic reactive power sources using mesh adaptive direct search. <i>IET Generation, Transmission and Distribution</i> , <b>2017</b> , 11, 3675-3682	2.5	6
77	A new approach to optimization of dynamic reactive power sources addressing FIDVR issues <b>2014</b> ,		6
76	A study on fluctuations in electromechanical oscillation frequencies of power systems <b>2014</b> ,		6
75	Computing Safety Margins of a Generation Rejection Scheme: A Framework for Online Implementation. <i>IEEE Transactions on Smart Grid</i> , <b>2016</b> , 1-1	10.7	6
74	. <i>IEEE Transactions on Power Systems</i> , <b>2021</b> , 1-1	7	6
73	. <i>IEEE Access</i> , <b>2018</b> , 6, 62687-62698	3.5	6
72	Understanding Subsynchronous Oscillations in DFIG-Based Wind Farms Without Series Compensation. <i>IEEE Access</i> , <b>2019</b> , 7, 107201-107210	3.5	5
71	Real-Time Optimized Load Recovery Considering Frequency Constraints. <i>IEEE Transactions on Power Systems</i> , <b>2019</b> , 34, 4204-4215	7	5

70	Graph theory based splitting strategies for power system islanding operation <b>2015,</b>		5
69	Guest Editorial for the Special Section on Enabling Very High Penetration Renewable Energy Integration Into Future Power Systems. <i>IEEE Transactions on Power Systems</i> , <b>2018</b> , 33, 3223-3226	7	5
68	Integration of phase-locked loop based real-time oscillation tracking in grid synchronized systems <b>2014,</b>		5
67	Computation of milestones for decision support during system restoration <b>2011,</b>		5
66	Online pre-analysis and real-time matching for controlled splitting of large-scale power networks <b>2005,</b>		5
65	<b>2018,</b>		5
64	Quantifying the synthetic inertia and load-damping effect of a converter-interfaced power source <b>2018,</b>		5
63	Analysis of power system oscillation frequency using Differential Groebner Basis and the Harmonic Balance Method <b>2015,</b>		4
62	Embedding spatial decomposition in parareal in time power system simulation <b>2018,</b>		4
61	A new approach for real-time voltage stability monitoring using PMUs <b>2014,</b>		4
60	Damping control for power systems using energy storage <b>2017,</b>		4
59	<b>2017,</b>		4
58	Fast power system simulation using semi-analytical solutions based on Pade approximants <b>2017,</b>		4
57	Semi-analytical fault-on trajectory simulation and its application in direct methods <b>2017,</b>		4
56	Privacy-preserving spectral estimation in smart grid <b>2015,</b>		4
55	<b>2012,</b>		4
54	Power system security pattern recognition based on phase space visualization <b>2008,</b>		4
53	. <i>IEEE Access</i> , <b>2020</b> , 8, 97452-97461	3-5	4

52	Adaptive Model Reduction for Parareal in Time Method for Transient Stability Simulations <b>2018</b> ,		4
51	A comparative analysis of intelligent classifiers for passive islanding detection in microgrids <b>2015</b> ,		3
50	Optimized Autonomous Operation Control to Maintain the Frequency, Voltage and Accurate Power Sharing for DGs in Islanded Systems. <i>IEEE Transactions on Smart Grid</i> , <b>2020</b> , 11, 3885-3895	10.7	3
49	A new hybrid approach to thevenin equivalent estimation for voltage stability monitoring <b>2015</b> ,		3
48	A Dynamized Power Flow Method Based on Differential Transformation. <i>IEEE Access</i> , <b>2020</b> , 8, 182441-182450	3.45	3
47	Adaptive Optimal PMU Placement Based on Empirical Observability Gramian**This work was supported in part by U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability under contract DE-AC02-06CHff357, the CURENT engineering research center, and Naval Research Laboratory and Defense Advanced Research Projects Agency. <i>IEEE Systems Online</i> , <b>2014</b> , 13, 188-197	0.7	3
46	Remote Voltage Control Using the Holomorphic Embedding Load Flow Method. <i>IEEE Transactions on Smart Grid</i> , <b>2019</b> , 10, 6308-6319	10.7	3
45	Optimization of SVC settings to improve post-fault voltage recovery and angular stability. <i>Journal of Modern Power Systems and Clean Energy</i> , <b>2019</b> , 7, 491-499	4	3
44	A Computationally Efficient Method for Bounding Impacts of Multiple Uncertain Parameters in Dynamic Load Models. <i>IEEE Transactions on Power Systems</i> , <b>2019</b> , 34, 897-907	7	3
43	Real-Time Area Angle Monitoring Using Synchrophasors: A Practical Framework and Utility Deployment. <i>IEEE Transactions on Smart Grid</i> , <b>2021</b> , 12, 859-870	10.7	3
42	Online Voltage Stability Assessment for Load Areas Based on the Holomorphic Embedding Method <b>2018</b> ,		3
41	Optimal PMU placement for power system dynamic state estimation by using empirical observability Gramian <b>2015</b> ,		2
40	Understanding a Type of Forced Oscillation Caused by Steam-Turbine Governors. <i>IEEE Transactions on Energy Conversion</i> , <b>2020</b> , 35, 1719-1722	5.4	2
39	Measurement-based voltage stability assessment and control on CURENT hardware test bed system <b>2016</b> ,		2
38	Methods to establish input-output relationship for system identification-based models <b>2014</b> ,		2
37	Power system simulation using the multi-stage adomian decomposition method <b>2017</b> ,		2
36	Identification and wide-area visualization of the centers of oscillation for a large-scale power system <b>2014</b> ,		2
35	A Phase Locked Loop-based approach to real-time modal analysis on synchrophasor measurements <b>2014</b> ,		2



34	A study on wind frequency control under high wind penetration on an NPCC system model <b>2014,</b>		2
33	<b>2012,</b>		2
32	A two-phase method based on OBDD for searching for splitting strategies of large-scale power systems		2
31	. <i>IEEE Transactions on Power Systems</i> , <b>2021</b> , 36, 3142-3152	7	2
30	Interaction Graph-Based Active Islanding to Mitigate Cascading Outages <b>2019,</b>		2
29	Initial Study of the Power System Stability Boundary Estimated from Nonlinear Modal Decoupling <b>2019,</b>		2
28	Estimating Transient Stability Margin Regarding a Dominant Oscillation Mode <b>2019,</b>		2
27	Measurement-Based Voltage Stability Assessment Considering Generator VAR Limits. <i>IEEE Transactions on Smart Grid</i> , <b>2020</b> , 11, 301-311	10.7	2
26	Contingency Analysis Based on Partitioned and Parallel Holomorphic Embedding. <i>IEEE Transactions on Power Systems</i> , <b>2021</b> , 1-1	7	2
25	A Holomorphic Embedding Method to Solve Unstable Equilibrium Points of Power Systems <b>2018,</b>		2
24	Stochastic optimization of distributed generator location and sizing in an islanded utility microgrid during a large-scale grid disturbance. <i>Sustainable Energy, Grids and Networks</i> , <b>2021</b> , 27, 100516	3.6	2
23	Vulnerability assessment for voltage stability based on solvability regions of decoupled power flow equations. <i>Applied Energy</i> , <b>2021</b> , 304, 117738	10.7	2
22	Analytical Solutions for Power Flow Equations Based on the Multivariate Quotient-Difference Method <b>2019,</b>		1
21	Power System Transient Stability Analysis Using High-Order Taylor Expansion Systems <b>2019,</b>		1
20	Observability and Estimation Methods Using Synchrophasor. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , <b>2014</b> , 47, 963-968		1
19	Extended Prony Analysis on Power System Oscillation Under a Near-Resonance Condition <b>2020,</b>		1
18	Demand Response to Help Mitigate Cascading Outages: A Case Study on the 2011 Tornado Super Outbreak <b>2019,</b>		1
17	Direct Damping Feedback Control Using Power Electronics-Interfaced Resources. <i>IEEE Transactions on Power Systems</i> , <b>2021</b> , 1-1	7	1

16	Analytical Approach to Estimating the Probability of Transient Stability under Stochastic Disturbances <b>2018</b> ,		1
15	Analytical static voltage stability boundary based on holomorphic embedding. <i>International Journal of Electrical Power and Energy Systems</i> , <b>2022</b> , 134, 107386	5.1	1
14	A Semi-Analytical Solution Approach for Solving Constant-Coefficient First-Order Partial Differential Equations <b>2022</b> , 6, 704-709		1
13	A Hybrid Energy and Mode Decomposition-Based Method for Evaluating Generators Damping in Multi-Machine Power Systems. <i>IEEE Access</i> , <b>2021</b> , 9, 37156-37166	3.5	0
12	Formulation and Visualization of Bus Voltage-Var Safety Regions for a Power System. <i>IEEE Transactions on Power Systems</i> , <b>2022</b> , 1-1	7	0
11	Multi-stage stochastic optimization of islanded utility-microgrids after natural disasters. <i>Operations Research Perspectives</i> , <b>2022</b> , 100235	2.1	0
10	Measurement-based voltage stability monitoring for load areas <b>2018</b> , 429-456		
9	Coherency Theory: An Excellent Reference on the Subject [Book Review]. <i>IEEE Power and Energy Magazine</i> , <b>2014</b> , 12, 102-104	2.4	
8	On Periodical Damping Ratio of a Controlled Dynamical System With Parametric Resonances <b>2022</b> , 6, 2228-2233		
7	WAMS-Based Controlled System Separation to Mitigate Cascading Failures in Smart Grid. <i>Power Electronics and Power Systems</i> , <b>2019</b> , 185-195	0.3	
6	Understanding Cascading Failures <b>2018</b> , 69-140		
5	Strategies for Controlled System Separation <b>2018</b> , 141-196		
4	Online Decision Support for Controlled System Separation <b>2018</b> , 197-223		
3	Constraints of System Restoration <b>2018</b> , 225-254		
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