Mark K Transtrum

List of Publications by Year in Descending Order

53 papers	1,017 citations	16 h-index	31 g-index
61 ext. papers	1,345 ext. citations	4.6 avg, IF	4.6 L-index

#	Paper	IF	Citations
53	Integration of Physics- and Data-Driven Power System Models in Transient Analysis After Major Disturbances. *IEEE Systems Journal*, **2022**, 1-12	4.3	1
52	Symbolic Regression for Data-Driven Dynamic Model Refinement in Power Systems. *IEEE Transactions on Power Systems*, **2021**, 36, 2390-2402	7	2
51	Effect of the density of states at the Fermi level on defect free energies and superconductivity: A case study of Nb3Sn. *Physical Review B*, **2021**, 103,	3.3	2
50	Automatic classification and reduction of wind noise in spectral data. *JASA Express Letters*, **2021**, 1, 063602		0
49	Analysis of magnetic vortex dissipation in Sn-segregated boundaries in Nb3Sn superconducting RF cavities. *Physical Review B*, **2021**, 103,	3.3	2
48	State Estimation Model Reduction through the Manifold Boundary Approximation Method. *IEEE Transactions on Power Systems*, **2021**, 1-1	7	0
47	Interleaving physics- and data-driven models for power system transient dynamics. *Electric Power Systems Research*, **2020**, 189, 106824	3.5	2
46	Flexible hybrid state estimation for power systems with communication irregularities. *IET Generation, Transmission and Distribution*, **2020**, 14, 2111-2119	2.5	3
45	Data-Driven Classification, Reduction, Parameter Identification and State Extension in Hybrid Power Systems. *IEEE Transactions on Power Systems*, **2020**, 1-1	7	2
44	Vortex nucleation in superconductors within time-dependent Ginzburg-Landau theory in two and three dimensions: Role of surface defects and material inhomogeneities. *Physical Review B*, **2020**, 101,	3.3	9
43	Data Classification and Parameter Identification in Power Systems by Manifold Learning **2019**,		1
42	Modeling inter-particle magnetic correlations in magnetite nanoparticle assemblies using x-ray magnetic scattering data. *AIP Advances*, **2019**, 9, 035033	1.5	5
41	Model Boundary Approximation Method as a Unifying Framework for Balanced Truncation and Singular Perturbation Approximation. *IEEE Transactions on Automatic Control*, **2019**, 64, 4796-4802	5.9	4
40	Unwinding the model manifold: Choosing similarity measures to remove local minima in sloppy dynamical systems. *Physical Review E*, **2019**, 100, 012206	2.4	0
39	Network Reduction in Transient Stability Models using Partial Response Matching **2019**,		1
38	Determination of Reaction Kinetics by Calorimetry. *Springer Briefs in Molecular Science*, **2018**, 23-27	0.6	
37	Maximizing the information learned from finite data selects a simple model. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 1760-1765	11.5	22

36	Calorimetric Methods for Measuring Stability and Reusability of Membrane Immobilized Enzymes. *Journal of Food Science*, **2018**, 83, 326-331	3.4	5
35	Information Geometry Approach to Verification of Dynamic Models in Power Systems. *IEEE Transactions on Power Systems*, **2018**, 33, 440-450	7	10
34	The Spectrum of Mechanism-Oriented Models and Methods for Explanations of Biological Phenomena. *Processes*, **2018**, 6,	2.9	8
33	Experimental design and model reduction in systems biology. *Quantitative Biology*, **2018**, 6, 287-306	3.9	4
32	Influence of Communication Irregularities and Co-simulation on Hybrid Power System State Estimation **2018**,		1
31	Machine learning-based ensemble model predictions of outdoor ambient sound levels **2018**,		2
30	Geometrically Motivated Reparameterization for Identifiability Analysis in Power Systems Models **2018**,		1
29	Effect of extreme temperatures on soil: A calorimetric approach. *Thermochimica Acta*, **2018**, 670, 128-135	2.9	5
28	Information geometry for model identification and parameter estimation in renewable energy DFIG plant case. *IET Generation, Transmission and Distribution*, **2018**, 12, 1294-1302	2.5	4
27	Mechanisms of In Vivo Ribosome Maintenance Change in Response to Nutrient Signals. *Molecular and Cellular Proteomics*, **2017**, 16, 243-254	7.6	49
26	Theoretical estimates of maximum fields in superconducting resonant radio frequency cavities: stability theory, disorder, and laminates. *Superconductor Science and Technology*, **2017**, 30, 033002	3.1	23
25	Measurement-Directed Reduction of Dynamic Models in Power Systems. *IEEE Transactions on Power Systems*, **2017**, 32, 2243-2253	7	16
24	Hybrid power system state estimation with irregular sampling **2017**,		2
23	Ginzburg-Landau theory of the superheating field anisotropy of layered superconductors. *Physical Review B*, **2016**, 94,	3.3	6
22	Information geometry for model verification in energy systems **2016**,		3
21	Enzyme-catalyzed and binding reaction kinetics determined by titration calorimetry. *Biochimica Et Biophysica Acta - General Subjects*, **2016**, 1860, 957-966	4	31
20	The Limitations of Model-Based Experimental Design and Parameter Estimation in Sloppy Systems. *PLoS Computational Biology*, **2016**, 12, e1005227	5	32
19	Sloppiness and the Geometry of Parameter Space. *Studies in Mechanobiology, Tissue Engineering and Biomaterials*, **2016**, 271-299	0.5	12

18	Bridging Mechanistic and Phenomenological Models of Complex Biological Systems. *PLoS Computational Biology*, **2016**, 12, e1004915	5	32
17	Shielding Superconductors with Thin Films as Applied to rf Cavities for Particle Accelerators. *Physical Review Applied*, **2015**, 4,	4.3	15
16	Perspective: Sloppiness and emergent theories in physics, biology, and beyond. *Journal of Chemical Physics*, **2015**, 143, 010901	3.9	151
15	A unified view of Balanced Truncation and Singular Perturbation Approximations **2015**,		2
14	Enzyme kinetics determined by single-injection isothermal titration calorimetry. *Methods*, **2015**, 76, 194-200	4.6	32
13	Model reduction by manifold boundaries. *Physical Review Letters*, **2014**, 113, 098701	7.4	49
12	Parameter space compression underlies emergent theories and predictive models. *Science*, **2013**, 342, 604-7	33.3	146
11	Use of the LQ model with large fraction sizes results in underestimation of isoeffect doses. *Radiotherapy and Oncology*, **2013**, 109, 21-5	5.3	38
10	Structural susceptibility and separation of time scales in the van der Pol oscillator. *Physical Review E* , **2012**, 86, 026712	2.4	7
9	Optimal experiment selection for parameter estimation in biological differential equation models. *BMC Bioinformatics*, **2012**, 13, 181	3.6	20
8	Geometry of nonlinear least squares with applications to sloppy models and optimization. *Physical Review E*, **2011**, 83, 036701	2.4	85
7	Comment on "Sloppy models, parameter uncertainty, and the role of experimental design". *Molecular BioSystems*, **2011**, 7, 2522; author reply 2523-4		14
6	Superheating field of superconductors within Ginzburg-Landau theory. *Physical Review B*, **2011**, 83,	3.3	40
5	Why are nonlinear fits to data so challenging?. *Physical Review Letters*, **2010**, 104, 060201	7.4	107
4	An analytic iterative approach to solving the time-independent Schrdinger equation. *International Journal of Quantum Chemistry*, **2009**, 109, 982-998	2.1	
3	A perturbative approach to Snyder space with applications. *Journal of Physics A*, **2006**, 39, 14985-14996		
2	Commutation relations for functions of operators. *Journal of Mathematical Physics*, **2005**, 46, 063510	1.2	6
1	Bayesian, frequentist, and information geometric approaches to parametric uncertainty quantification of classical empirical interatomic potentials. *Journal of Chemical Physics*,	3.9	1