

Carlos Coimbra

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106
papers

4,731
citations

37
h-index

67
g-index

118
ext. papers

5,559
ext. citations

5.4
avg, IF

6.29
L-index

#	Paper	IF	Citations
106	Solar forecasting methods for renewable energy integration. <i>Progress in Energy and Combustion Science</i> , 2013 , 39, 535-576	33.6	569
105	Assessment of forecasting techniques for solar power production with no exogenous inputs. <i>Solar Energy</i> , 2012 , 86, 2017-2028	6.8	373
104	Intra-hour DNI forecasting based on cloud tracking image analysis. <i>Solar Energy</i> , 2013 , 91, 327-336	6.8	230
103	History and trends in solar irradiance and PV power forecasting: A preliminary assessment and review using text mining. <i>Solar Energy</i> , 2018 , 168, 60-101	6.8	219
102	Forecasting of global and direct solar irradiance using stochastic learning methods, ground experiments and the NWS database. <i>Solar Energy</i> , 2011 , 85, 746-756	6.8	218
101	Fundamental aspects of modeling turbulent particle dispersion in dilute flows. <i>Progress in Energy and Combustion Science</i> , 1996 , 22, 363-399	33.6	143
100	Short-term reforecasting of power output from a 48 MWe solar PV plant. <i>Solar Energy</i> , 2015 , 112, 68-77	6.8	138
99	Day-ahead forecasting of solar power output from photovoltaic plants in the American Southwest. <i>Renewable Energy</i> , 2016 , 91, 11-20	8.1	120
98	Hybrid solar forecasting method uses satellite imaging and ground telemetry as inputs to ANNs. <i>Solar Energy</i> , 2013 , 92, 176-188	6.8	117
97	The variable viscoelasticity oscillator. <i>Annalen Der Physik</i> , 2005 , 14, 378-389	2.6	111
96	Hybrid intra-hour DNI forecasts with sky image processing enhanced by stochastic learning. <i>Solar Energy</i> , 2013 , 98, 592-603	6.8	110
95	Proposed Metric for Evaluation of Solar Forecasting Models. <i>Journal of Solar Energy Engineering, Transactions of the ASME</i> , 2013 , 135,	2.3	99
94	Cloud-tracking methodology for intra-hour DNI forecasting. <i>Solar Energy</i> , 2014 , 102, 267-275	6.8	97
93	On the variable order dynamics of the nonlinear wake caused by a sedimenting particle. <i>Physica D: Nonlinear Phenomena</i> , 2011 , 240, 1111-1118	3.3	94
92	Benefits of solar forecasting for energy imbalance markets. <i>Renewable Energy</i> , 2016 , 86, 819-830	8.1	88
91	Variable Order Modeling of Diffusive-convective Effects on the Oscillatory Flow Past a Sphere. <i>JVC/Journal of Vibration and Control</i> , 2008 , 14, 1659-1672	2	87
90	General solution of the particle momentum equation in unsteady Stokes flows. <i>Journal of Fluid Mechanics</i> , 1998 , 370, 53-72	3.7	86

89	Real-time forecasting of solar irradiance ramps with smart image processing. <i>Solar Energy</i> , 2015 , 114, 91-104	6.8	81
88	Nonlinear dynamics and control of a variable order oscillator with application to the van der Pol equation. <i>Nonlinear Dynamics</i> , 2009 , 56, 145-157	5	72
87	Nearest-neighbor methodology for prediction of intra-hour global horizontal and direct normal irradiances. <i>Renewable Energy</i> , 2015 , 80, 770-782	8.1	68
86	Assessment of machine learning techniques for deterministic and probabilistic intra-hour solar forecasts. <i>Renewable Energy</i> , 2018 , 123, 191-203	8.1	66
85	Verification of deterministic solar forecasts. <i>Solar Energy</i> , 2020 , 210, 20-37	6.8	63
84	Real-time prediction intervals for intra-hour DNI forecasts. <i>Renewable Energy</i> , 2015 , 83, 234-244	8.1	59
83	Net load forecasting for high renewable energy penetration grids. <i>Energy</i> , 2016 , 114, 1073-1084	7.9	59
82	3-D numerical model for predicting NOx emissions from an industrial pulverized coal combustor. <i>Fuel</i> , 1994 , 73, 1128-1134	7.1	57
81	A Smart Image-Based Cloud Detection System for Intrahour Solar Irradiance Forecasts. <i>Journal of Atmospheric and Oceanic Technology</i> , 2014 , 31, 1995-2007	2	51
80	Performance evaluation of various cryogenic energy storage systems. <i>Energy</i> , 2015 , 90, 1024-1032	7.9	50
79	Streamline-based method for intra-day solar forecasting through remote sensing. <i>Solar Energy</i> , 2014 , 108, 447-459	6.8	49
78	Short-term probabilistic forecasts for Direct Normal Irradiance. <i>Renewable Energy</i> , 2017 , 101, 526-536	8.1	48
77	Spherical Particle Motion in Harmonic Stokes Flows. <i>AIAA Journal</i> , 2001 , 39, 1673-1682	2.1	47
76	Overview of Solar-Forecasting Methods and a Metric for Accuracy Evaluation 2013 , 171-194		45
75	Forecasting of Global Horizontal Irradiance Using Sky Cover Indices. <i>Journal of Solar Energy Engineering, Transactions of the ASME</i> , 2013 , 135,	2.3	44
74	On the viscous motion of a small particle in a rotating cylinder. <i>Journal of Fluid Mechanics</i> , 2002 , 469, 257-286	3.7	44
73	On the determination of atmospheric longwave irradiance under all-sky conditions. <i>Solar Energy</i> , 2017 , 144, 40-48	6.8	40
72	On the Selection and Meaning of Variable Order Operators for Dynamic Modeling. <i>International Journal of Differential Equations</i> , 2010 , 2010, 1-16	0.8	40

71	A comprehensive dataset for the accelerated development and benchmarking of solar forecasting methods. <i>Journal of Renewable and Sustainable Energy</i> , 2019 , 11, 036102	2.5	39
70	On the role of lagged exogenous variables and spatio-temporal correlations in improving the accuracy of solar forecasting methods. <i>Renewable Energy</i> , 2015 , 78, 203-218	8.1	38
69	Day-ahead resource forecasting for concentrated solar power integration. <i>Renewable Energy</i> , 2016 , 86, 866-876	8.1	37
68	An experimental study on stationary history effects in high-frequency Stokes flows. <i>Journal of Fluid Mechanics</i> , 2004 , 504, 353-363	3.7	37
67	Effects of surface roughness and oscillatory flow on the dissolution of plaster forms: Evidence for nutrient mass transfer to coral reef communities. <i>Limnology and Oceanography</i> , 2005 , 50, 246-254	4.8	37
66	Impact of local broadband turbidity estimation on forecasting of clear sky direct normal irradiance. <i>Solar Energy</i> , 2015 , 117, 125-138	6.8	32
65	Quantitative evaluation of the impact of cloud transmittance and cloud velocity on the accuracy of short-term DNI forecasts. <i>Renewable Energy</i> , 2016 , 86, 1362-1371	8.1	30
64	On the determination of coherent solar microclimates for utility planning and operations. <i>Solar Energy</i> , 2014 , 102, 173-188	6.8	30
63	Sun-tracking imaging system for intra-hour DNI forecasts. <i>Renewable Energy</i> , 2016 , 96, 792-799	8.1	29
62	Short-term irradiance forecastability for various solar micro-climates. <i>Solar Energy</i> , 2015 , 122, 587-602	6.8	28
61	Cloud enhancement of global horizontal irradiance in California and Hawaii. <i>Solar Energy</i> , 2016 , 130, 1286-1300	6.8	28
60	Verification of the SUNY direct normal irradiance model with ground measurements. <i>Solar Energy</i> , 2014 , 99, 246-258	6.8	27
59	Impact of onsite solar generation on system load demand forecast. <i>Energy Conversion and Management</i> , 2013 , 75, 701-709	10.6	24
58	Ensemble re-forecasting methods for enhanced power load prediction. <i>Energy Conversion and Management</i> , 2014 , 80, 582-590	10.6	22
57	On the control and stability of variable-order mechanical systems. <i>Nonlinear Dynamics</i> , 2016 , 86, 695-710	10.6	22
56	Clustering the solar resource for grid management in island mode. <i>Solar Energy</i> , 2014 , 110, 507-518	6.8	21
55	Radiative cooling resource maps for the contiguous United States. <i>Journal of Renewable and Sustainable Energy</i> , 2019 , 11, 036501	2.5	19
54	Optimal theoretical design of 2-D microscale viscous pumps for maximum mass flow rate and minimum power consumption. <i>International Journal of Heat and Fluid Flow</i> , 2007 , 28, 526-536	2.4	17

53	Net load forecasts for solar-integrated operational grid feeders. <i>Solar Energy</i> , 2017 , 158, 236-246	6.8	16
52	Experimental verification of fractional history effects on the viscous dynamics of small spherical particles. <i>Experiments in Fluids</i> , 2005 , 38, 112-116	2.5	16
51	On the effective spectral emissivity of clear skies and the radiative cooling potential of selectively designed materials. <i>International Journal of Heat and Mass Transfer</i> , 2019 , 135, 1053-1062	4.9	15
50	Objective framework for optimal distribution of solar irradiance monitoring networks. <i>Renewable Energy</i> , 2015 , 80, 153-165	8.1	15
49	Optimal design of non-Newtonian, micro-scale viscous pumps for biomedical devices. <i>Biotechnology and Bioengineering</i> , 2007 , 96, 37-47	4.9	15
48	Underwater cloth simulation with fractional derivatives. <i>ACM Transactions on Graphics</i> , 2010 , 29, 1-9	7.6	14
47	On a causal dispersion model for the optical properties of metals. <i>Applied Optics</i> , 2018 , 57, 5333-5347	1.7	13
46	On the dynamics of a spherical scaffold in rotating bioreactors. <i>Biotechnology and Bioengineering</i> , 2003 , 84, 382-9	4.9	13
45	Adaptive image features for intra-hour solar forecasts. <i>Journal of Renewable and Sustainable Energy</i> , 2019 , 11, 036101	2.5	12
44	On the stability of the Maxey-Riley equation in nonuniform linear flows. <i>Physics of Fluids</i> , 2005 , 17, 11330-14	11	12
43	Genetic optimization of heat transfer correlations for evaporator tube flows. <i>International Journal of Heat and Mass Transfer</i> , 2014 , 70, 330-339	4.9	11
42	Stochastic-Learning Methods 2013 , 383-406		11
41	Modeling particle dispersion in a turbulent, multiphase mixing layer. <i>Journal of Wind Engineering and Industrial Aerodynamics</i> , 1998 , 73, 79-97	3.7	10
40	Spectral model for clear sky atmospheric longwave radiation. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2018 , 209, 196-211	2.1	9
39	Direct Power Output Forecasts From Remote Sensing Image Processing. <i>Journal of Solar Energy Engineering, Transactions of the ASME</i> , 2018 , 140,	2.3	9
38	Optical response of thin amorphous films to infrared radiation. <i>Physical Review B</i> , 2018 , 97,	3.3	8
37	Effectiveness of Complex Design Through an Evolutionary Approach. <i>Journal of Thermophysics and Heat Transfer</i> , 2008 , 22, 115-118	1.3	8
36	Unsteady heat transfer in the harmonic heating of a dilute suspension of small particles. <i>International Journal of Heat and Mass Transfer</i> , 2000 , 43, 3305-3316	4.9	8

35	The Dynamic Behavior of Once-Through Direct Steam Generation Parabolic Trough Solar Collector Row Under Moving Shadow Conditions. <i>Journal of Solar Energy Engineering, Transactions of the ASME</i> , 2017 , 139,	2.3	7
34	Estimation of the building energy loads and LNG demand for a cogeneration-based community energy system: A case study in Korea. <i>Energy Conversion and Management</i> , 2014 , 87, 1010-1026	10.6	7
33	Dynamics of suspended particles in eccentrically rotating flows. <i>Journal of Fluid Mechanics</i> , 2005 , 535, 101-110	3.7	7
32	A database infrastructure to implement real-time solar and wind power generation intra-hour forecasts. <i>Renewable Energy</i> , 2018 , 123, 513-525	8.1	6
31	A Sustainable Substitute for Ivory: the Jarina Seed from the Amazon. <i>Scientific Reports</i> , 2015 , 5, 14387	4.9	6
30	Heat Transfer in a Homogeneous Suspension Including Radiation and History Effects. <i>Journal of Thermophysics and Heat Transfer</i> , 1998 , 12, 304-312	1.3	6
29	Evaluation of a dimensionless group number to determine second-einstein temperatures in a heat capacity model for all coal ranks. <i>Combustion and Flame</i> , 1995 , 101, 209-220	5.3	6
28	Variable-order modeling of nonlocal emergence in many-body systems: Application to radiative dispersion. <i>Physical Review E</i> , 2018 , 98,	2.4	6
27	Mathematical methods for optimized solar forecasting 2017 , 111-152		5
26	Anisotropic corrections for the downwelling radiative heat transfer flux from various types of aerosols. <i>International Journal of Heat and Mass Transfer</i> , 2019 , 136, 1006-1016	4.9	4
25	Optimized heat transfer correlations for pure and blended refrigerants. <i>International Journal of Heat and Mass Transfer</i> , 2015 , 85, 577-584	4.9	4
24	Boiling heat transfer on a simulated nuclear fuel rod with annular fins. <i>International Journal of Heat and Mass Transfer</i> , 2014 , 68, 29-34	4.9	4
23	Approximation of Transient 1D Conduction in a Finite Domain Using Parametric Fractional Derivatives. <i>Journal of Heat Transfer</i> , 2011 , 133,	1.8	4
22	SCOPE: Spectral cloud optical property estimation using real-time GOES-R longwave imagery. <i>Journal of Renewable and Sustainable Energy</i> , 2020 , 12, 026501	2.5	4
21	Anomalous carrier transport model for broadband infrared absorption in metals. <i>Physical Review B</i> , 2018 , 98,	3.3	4
20	Cloud detection using convolutional neural networks on remote sensing images. <i>Solar Energy</i> , 2021 , 230, 1020-1032	6.8	4
19	Fractional dynamics of tethered particles in oscillatory Stokes flows. <i>Journal of Fluid Mechanics</i> , 2014 , 746, 606-625	3.7	3
18	Forecasting of Global Horizontal Irradiance Using Sky Cover Indices 2011 ,		3

17	A Novel Metric for Evaluation of Solar Forecasting Models 2011 ,		3
16	THE COMPARISON OF TWO COMPREHENSIVE COMBUSTION CODES TO SIMULATE LARGE-SCALE, OIL-FIRED BOILERS. <i>Combustion Science and Technology</i> , 1996 , 120, 55-81	1.5	3
15	Formal Evolutionary Development of Low-Entropy Dendritic Thermal Systems. <i>Journal of Thermophysics and Heat Transfer</i> , 2009 , 23, 822-827	1.3	2
14	History effects on the viscous motion of acoustically forced particles. <i>Applied Physics Letters</i> , 2006 , 88, 214106	3.4	2
13	Particle Response to Low-Reynolds-Number Oscillation of a Fluid in Microgravity. <i>AIAA Journal</i> , 2006 , 44, 1060-1064	2.1	2
12	Design and preparation of a particle dynamics space flight experiment, SHIVA. <i>Annals of the New York Academy of Sciences</i> , 2004 , 1027, 550-66	6.5	2
11	Modelling of combustion and NOx emissions in industrial equipment. <i>Pure and Applied Chemistry</i> , 1993 , 65, 345-354	2.1	2
10	Intra-hour irradiance forecasting techniques for solar power integration: a review. <i>IScience</i> , 2021 , 24, 103136	6.1	2
9	Temperature-dependent carrier transport: Low-complexity model for the infrared optical and radiative properties of nickel. <i>Journal of Applied Physics</i> , 2019 , 125, 205108	2.5	1
8	Simulating colliding flows in smoothed particle hydrodynamics with fractional derivatives. <i>Computer Animation and Virtual Worlds</i> , 2013 , 24, 511-523	0.9	1
7	SHIVA - Spaceflight holography investigation in a virtual apparatus 2000 ,		1
6	Pool evaporation under low Grashof number downward convection. <i>International Journal of Heat and Mass Transfer</i> , 2021 , 181, 122021	4.9	1
5	Spectral solar irradiance on inclined surfaces: A fast Monte Carlo approach. <i>Journal of Renewable and Sustainable Energy</i> , 2020 , 12, 053705	2.5	1
4	A network of sky imagers for spatial solar irradiance assessment. <i>Renewable Energy</i> , 2022 , 187, 1009-1019	8.1	0
3	Isothermal and near-isothermal free evaporation of water from open tubes in air. <i>International Journal of Heat and Mass Transfer</i> , 2022 , 189, 122687	4.9	0
2	Control parameterisation for POD via software-in-the-loop simulation. <i>Journal of Engineering</i> , 2019 , 2019, 4864-4868	0.7	
1	On the Slip Correction Factor for Simple Gas Molecules Diffusing in Air. <i>AIAA Journal</i> , 1-10	2.1	