Nils P Wedi

List of Publications by Year
in descending order

58 papers	3,056 citations	159585 30 h-index	161849 54 g-index
62 all docs	62 docs citations	62 times ranked	3958 citing authors

#	Article	IF	Citations
1	DYAMOND: the DYnamics of the Atmospheric general circulation Modeled On Non-hydrostatic Domains. Progress in Earth and Planetary Science, 2019, 6, .	3.0	239
2	High-Resolution Global Climate Simulations with the ECMWF Model in Project Athena: Experimental Design, Model Climate, and Seasonal Forecast Skill. Journal of Climate, 2012, 25, 3155-3172.	3.2	202
3	Simulating the diurnal cycle of rainfall in global climate models: resolution versus parameterization. Climate Dynamics, 2012, 39, 399-418.	3.8	190
4	Stochastic representations of model uncertainties at ECMWF: state of the art and future vision. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 2315-2339.	2.7	170
5	Tropical Cyclone Climatology in a 10-km Global Atmospheric GCM: Toward Weather-Resolving Climate Modeling. Journal of Climate, 2012, 25, 3867-3893.	3.2	157
6	The new ECMWF VAREPS (Variable Resolution Ensemble Prediction System). Quarterly Journal of the Royal Meteorological Society, 2007, 133, 681-695.	2.7	144
7	Characteristics of Occasional Poor Medium-Range Weather Forecasts for Europe. Bulletin of the American Meteorological Society, 2013, 94, 1393-1405.	3.3	139
8	Evidence for Enhanced Landâ€“Atmosphere Feedback in a Warming Climate. Journal of Hydrometeorology, 2012, 13, 981-995.	1.9	104
9	The digital revolution of Earth-system science. Nature Computational Science, 2021, 1, 104-113.	8.0	98
10	Satellite and In Situ Observations for Advancing Global Earth Surface Modelling: A Review. Remote Sensing, 2018, 10, 2038.	4.0	95
11	A consistent framework for discrete integrations of soundproof and compressible PDEs of atmospheric dynamics. Journal of Computational Physics, 2014, 263, 185-205.	3.8	81
12	Revolutionizing Climate Modeling with Project Athena: A Multi-Institutional, International Collaboration. Bulletin of the American Meteorological Society, 2013, 94, 231-245.	3.3	75
13	Evaluation of Medium-Range Forecasts for Hurricane Sandy. Monthly Weather Review, 2014, 142, 1962-1981.	1.4	65
14	Increasing horizontal resolution in numerical weather prediction and climate simulations: illusion or panacea?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130289.	3.4	65
15	The Aqua-Planet Experiment (APE): CONTROL SST Simulation. Journal of the Meteorological Society of Japan, 2013, 91A, 17-56.	1.8	64
16	Extending Gal-Chen and Somerville terrain-following coordinate transformation on time-dependent curvilinear boundaries. Journal of Computational Physics, 2004, 193, 1-20.	3.8	61
17	A framework for testing global nonâ€hydrostatic models. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 469-484.	2.7	56
18	A Fast Spherical Harmonics Transform for Global NWP and Climate Models. Monthly Weather Review, 2013, 141, 3450-3461.	1.4	54

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19	A Baseline for Global Weather and Climate Simulations at 1 km Resolution. Journal of Advances in Modeling Earth Systems, 2020, 12, e2020MS002192.	3.8	54
20	The Intra-Seasonal Oscillation and its control of tropical cyclones simulated by high-resolution global atmospheric models. Climate Dynamics, 2012, 39, 2185-2206.	3.8	50
21	Crossing the chasm: how to develop weather and climate models for next generation computers?. Geoscientific Model Development, 2018, 11, 1799-1821.	3.6	50
22	Future Changes in the Western North Pacific Tropical Cyclone Activity Projected by a Multidecadal Simulation with a 16-km Global Atmospheric GCM. Journal of Climate, 2014, 27, 7622-7646.	3.2	49
23	How does subgridâ€scale parametrization influence nonlinear spectral energy fluxes in global NWP models?. Journal of Geophysical Research D: Atmospheres, 2016, 121, 5395-5410.	3.3	48
24	Assessing the scales in numerical weather and climate predictions: will exascale be the rescue?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180148.	3.4	48
25	FVM 1.0: a nonhydrostatic finite-volume dynamical core for the IFS. Geoscientific Model Development, 2019, 12, 651-676.	3.6	47
26	Reflecting on the Goal and Baseline for Exascale Computing: A Roadmap Based on Weather and Climate Simulations. Computing in Science and Engineering, 2019, 21, 30-41.	1.2	47
27	The Draupner wave: A fresh look and the emerging view. Journal of Geophysical Research: Oceans, 2016, 121, 6061-6075.	2.6	46
28	Direct Numerical Simulation of the Plumbâ€"McEwan Laboratory Analog of the QBO. Journals of the Atmospheric Sciences, 2006, 63, 3226-3252.	1.7	41
29	Current and Emerging Time-Integration Strategies in Global Numerical Weather and Climate Prediction. Archives of Computational Methods in Engineering, 2019, 26, 663-684.	10.2	39
30	A finite-volume module for simulating global all-scale atmospheric flows. Journal of Computational Physics, 2016, 314, 287-304.	3.8	34
31	Soil temperature at ECMWF: An assessment using groundâ€based observations. Journal of Geophysical Research D: Atmospheres, 2015, 120, 1361-1373.	3.3	33
32	Uncertainty in the Representation of Orography in Weather and Climate Models and Implications for Parameterized Drag. Journal of Advances in Modeling Earth Systems, 2019, 11, 2567-2585.	3.8	31
33	Comparing ECMWF highâ€resolution analyses with lidar temperature measurements in the middle atmosphere. Quarterly Journal of the Royal Meteorological Society, 2018, 144, 633-640.	2.7	30
34	Atlas : A library for numerical weather prediction and climate modelling. Computer Physics Communications, 2017, 220, 188-204.	7.5	29
35	Systematic Errors in Weather and Climate Models: Nature, Origins, and Ways Forward. Bulletin of the American Meteorological Society, 2018, 99, ES67-ES70.	3.3	28
36	The Numerics of Physical Parametrization in the ECMWF Model. Frontiers in Earth Science, 2018, 6, .	1.8	28

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37	Global Simulations of the Atmosphere at 1.45 km Grid-Spacing with the Integrated Forecasting System. Journal of the Meteorological Society of Japan, 2020, 98, 551-572.	1.8	27
38	A Nonlinear Perspective on the Dynamics of the MJO: Idealized Large-Eddy Simulations. Journals of the Atmospheric Sciences, 2010, 67, 1202-1217.	1.7	26
39	ECLand: The ECMWF Land Surface Modelling System. Atmosphere, 2021, 12, 723.	2.3	23
40	The ESCAPE project: Energy-efficient Scalable Algorithms for Weather Prediction at Exascale. Geoscientific Model Development, 2019, 12, 4425-4441.	3.6	19
41	Spectral Empirical Orthogonal Function Analysis of Weather and Climate Data. Monthly Weather Review, 2019, 147, 2979-2995.	1.4	18
42	Semi-implicit integrations of perturbation equations for all-scale atmospheric dynamics. Journal of Computational Physics, 2019, 376, 145-159.	3.8	17
43	A Partitioned Global Address Space implementation of the European Centre for Medium Range Weather Forecasts Integrated Forecasting System. International Journal of High Performance Computing Applications, 2015, 29, 261-273.	3.7	16
44	Upgraded global mapping information for earth system modelling: an application to surface water depth at the ECMWF. Hydrology and Earth System Sciences, 2019, 23, 4051-4076.	4.9	16
45	Resolved gravity waves in the tropical stratosphere: Impact of horizontal resolution and deep convection parametrization. Quarterly Journal of the Royal Meteorological Society, 2022, 148, 233-251.	2.7	16
46	Model intercomparison of COSMO 5.0 and IFS 45r1 at kilometer-scale grid spacing. Geoscientific Model Development, 2021, 14, 4617-4639.	3.6	15
47	More accuracy with less precision. Quarterly Journal of the Royal Meteorological Society, 2021, 147, 4358-4370.	2.7	13
48	Laboratory for internal gravity-wave dynamics: the numerical equivalent to the quasi-biennial oscillation (QBO) analogue. International Journal for Numerical Methods in Fluids, 2005, 47, 1369-1374.	1.6	9
49	The prospects for increasing the horizontal resolution of the Aeolus horizontal lineâ€ofâ€sight wind profiles. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 3499-3515.	2.7	8
50	Atmospheric Energy Spectra in Global Kilometre-Scale Models. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 74, 280-299.	1.7	8
51	Resilience and fault tolerance in high-performance computing for numerical weather and climate prediction. International Journal of High Performance Computing Applications, 2021, 35, 285-311.	3.7	7
52	Accelerating Extreme-Scale Numerical Weather Prediction. Lecture Notes in Computer Science, 2016, , 583-593.	1.3	5
53	Building the Next Generation of Climate Modelers: Scale-Aware Physics Parameterization and the â€œGrey Zoneâ€• Challenge. Bulletin of the American Meteorological Society, 2018, 99, ES185-ES189.	3.3	5
54	The energetics of wave-driven mean flow oscillations. International Journal for Numerical Methods in Fluids, 2006, 50, 1175-1191.	1.6	4

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55	A PGAS Implementation by Co-design of the ECMWF Integrated Forecasting System (IFS). , 2012, , .		4
56	Semiâ€implicit integration of the unified equations in a massâ€based coordinate: model formulation and numerical testing. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 3387-3408.	2.7	4
57	A reduced model of the Maddenâ€"Julian oscillation. International Journal for Numerical Methods in Fluids, 2008, 56, 1583-1588.	1.6	3
58	Sensitivities of the Maddenâ€"Julian oscillation forecasts to configurations of physics in the ECMWF global model. Atmospheric Chemistry and Physics, 2021, 21, 4759-4778.	4.9	1