Andrew N Staniforth

List of Publications by Year
in descending order

90 papers	4,959 citations	147801 31 h-index	91884 69 g-index
90 all docs	90 docs citations	90 times ranked	2540 citing authors

#	Article	IF	Citations
1	The Operational CMCâ€“MRB Global Environmental Multiscale (GEM) Model. Part I: Design Considerations and Formulation. Monthly Weather Review, 1998, 126, 1373-1395.	1.4	900
2	Semi-Lagrangian Integration Schemes for Atmospheric Modelsâ€"A Review. Monthly Weather Review, 1991, 119, 2206-2223.	1.4	899
3	An inherently massâ€conserving semiâ€implicit semiâ€Lagrangian discretization of the deepâ€atmosphere global nonâ€hydrostatic equations. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 1505-1520.	2.7	333
4	The Operational CMCâ€“MRB Global Environmental Multiscale (GEM) Model. Part II: Results. Monthly Weather Review, 1998, 126, 1397-1418.	1.4	283
5	Horizontal grids for global weather and climate prediction models: a review. Quarterly Journal of the Royal Meteorological Society, 2012, 138, 1-26.	2.7	148
6	The Conversion of Semi-Lagrangian Advection Schemes to Quasi-Monotone Schemes. Monthly Weather Review, 1992, 120, 2622-2632.	1.4	141
7	An Efficient Twoâ€Timeâ€Level Semiâ€Lagrangian Semiâ€Implicit Integration Scheme. Quarterly Journal of the Royal Meteorological Society, 1987, 113, 1025-1039.	2.7	136
8	The CMCâ€“MRB Global Environmental Multiscale (GEM) Model. Part III: Nonhydrostatic Formulation. Monthly Weather Review, 2002, 130, 339-356.	1.4	135
9	Validity of anelastic and other equation sets as inferred from normalâ€mode analysis. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 2761-2775.	2.7	83
10	A Variable-Resolution Finite-Element Technique for Regional Forecasting with the Primitive Equations. Monthly Weather Review, 1978, 106, 439-447.	1.4	82
11	Spurious Resonant Response of Semi-Lagrangian Discretizations to Orographic Forcing: Diagnosis and Solution. Monthly Weather Review, 1994, 122, 366-376.	1.4	82
12	SLICE: A Semi-Lagrangian Inherently Conserving and Efficient scheme for transport problems. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 2801-2820.	2.7	79
13	A Variable-Resolution Semi-Lagrangian Finite-Element Global Model of the Shallow-Water Equations. Monthly Weather Review, 1993, 121, 231-243.	1.4	73
14	A Two-Time-Level Semi-Lagrangian Semi-implicit Scheme for Spectral Models. Monthly Weather Review, 1988, 116, 2003-2012.	1.4	70
15	Finite Elements for Shallow-Water Equation Ocean Models. Monthly Weather Review, 1998, 126, 1931-1951.	1.4	62
16	A monotonic and positiveâ€“definite filter for a Semi-Lagrangian Inherently Conserving and Efficient (SLICE) scheme. Quarterly Journal of the Royal Meteorological Society, 2005, 131, 2923-2936.	2.7	61
17	A Semi-Implicit Finite-Element Barotropic Model. Monthly Weather Review, 1977, 105, 154-169.	1.4	57
18	SLICE-S: A Semi-Lagrangian Inherently Conserving and Efficient scheme for transport problems on the Sphere. Quarterly Journal of the Royal Meteorological Society, 2004, 130, 2649-2664.	2.7	55

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19	Aspects of the dynamical core of a nonhydrostatic, deep-atmosphere, unified weather and climate-prediction model. Journal of Computational Physics, 2008, 227, 3445-3464.	3.8	54
20	A Baroclinic Finite-Element Model for Regional Forecasting with the Primitive Equations. Monthly Weather Review, 1979, 107, 107-121.	1.4	53
21	An efficient two-time-level semi-Lagrangian semi-implicit integration scheme. Quarterly Journal of the Royal Meteorological Society, 1987, 113, 1025-1039.	2.7	51
22	A Mass-Conserving Semi-Lagrangian Scheme for the Shallow-Water Equations. Monthly Weather Review, 1994, 122, 243-248.	1.4	47
23	The Canadian Regional Data Assimilation System: Operational and Research Applications. Monthly Weather Review, 1994, 122, 1306-1325.	1.4	47
24	A proposed baroclinic wave test case for deepâ€•and shallowâ€atmosphere dynamical cores. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 1590-1602.	2.7	47
25	An Accurate and Efficient Finite-Element Global Model of the Shallow-Water Equations. Monthly Weather Review, 1990, 118, 2707-2717.	1.4	46
26	Normal modes of deep atmospheres. II: <I>f</I>â€"<I>F</I>-plane geometry. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 1793-1806.	2.7	46
27	A Semi-implicit Semi-Lagrangian Finite-Element Shallow-Water Ocean Model. Monthly Weather Review, 2000, 128, 1384-1401.	1.4	45
28	Normal modes of deep atmospheres. I: Spherical geometry. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 1771-1792.	2.7	44
29	A Finite-Element Formulation for the Vertical Discretization of Sigma-Coordinate Primitive Equation Models. Monthly Weather Review, 1977, 105, 1108-1118.	1.4	42
30	Semi-Implicit Semi-Lagrangian Integration Schemes for a Barotropic Finite-Element Regional Model. Monthly Weather Review, 1986, 114, 2078-2090.	1.4	33
31	A Diagnostic Analysis of the Superstorm of March 1993. Monthly Weather Review, 1995, 123, 1740-1761.	1.4	31
32	The impact of a digital filter finalization technique in a global data assimilation system. Tellus, Series A: Dynamic Meteorology and Oceanography, 1995, 47, 304-323.	1.7	29
33	Cascade interpolation for semiâ€Lagrangian advection over the sphere. Quarterly Journal of the Royal Meteorological Society, 1999, 125, 1445-1468.	2.7	29
34	Analysis of Parallel versus Sequential Splittings for Time-Stepping Physical Parameterizations. Monthly Weather Review, 2004, 132, 121-132.	1.4	29
35	Dispersion analysis of the spectral element method. Quarterly Journal of the Royal Meteorological Society, 2012, 138, 1934-1947.	2.7	29
36	Variable Resolution and Robustness. Monthly Weather Review, 1992, 120, 2633-2640.	1.4	28

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37	Analysis of the numerics of physicsâ€“dynamics coupling. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 2779-2799.	2.7	27
38	Conservation and Linear Rossby-Mode Dispersion on the Spherical C Grid. Monthly Weather Review, 2004, 132, 641-653.	1.4	27
39	A monotonicallyâ€damping secondâ€orderâ€accurate unconditionallyâ€stable numerical scheme for diffusion. Quarterly Journal of the Royal Meteorological Society, 2007, 133, 1559-1573.	2.7	26
40	The Deep-Atmosphere Euler Equations in a Generalized Vertical Coordinate. Monthly Weather Review, 2003, 131, 1931-1938.	1.4	25
41	A Simple Comparison of Four Physicsâ€“Dynamics Coupling Schemes. Monthly Weather Review, 2002, 130, 3129-3135.	1.4	23
42	The deep-atmosphere Euler equations with a mass-based vertical coordinate. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 1289-1300.	2.7	23
43	A Stability Analysis of a Family of Baroclinic Semi-Lagrangian Forecast Models. Monthly Weather Review, 1993, 121, 815-824.	1.4	22
44	Some numerical properties of approaches to physicsâ€“dynamics coupling for NWP. Quarterly Journal of the Royal Meteorological Society, 2006, 132, 27-42.	2.7	21
45	Stability of Vertical Discretization Schemes for Semi-Implicit Primitive Equation Models: Theory and Application. Monthly Weather Review, 1983, 111, 1189-1207.	1.4	19
46	Mixed Parallelâ€“Sequential-Split Schemes for Time-Stepping Multiple Physical Parameterizations. Monthly Weather Review, 2005, 133, 989-1002.	1.4	19
47	An inherently massâ€conserving iterative semiâ€implicit semiâ€Lagrangian discretization of the nonâ€hydrostatic verticalâ€slice equations. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 799-814.	2.7	19
48	The impact of a digital filter finalization technique in a global data assimilation system. Tellus, Series A: Dynamic Meteorology and Oceanography, 1995, 47, 304-323.	1.7	18
49	Analysis of a mixed finiteâ€element pair proposed for an atmospheric dynamical core. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 1239-1254.	2.7	18
50	Analysis of semi-Lagrangian trajectory computations. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 2065-2085.	2.7	16
51	Cascade interpolation for semi-Lagrangian advection over the sphere. Quarterly Journal of the Royal Meteorological Society, 1999, 125, 1445-1468.	2.7	16
52	An accurate interpolating scheme for semi-Lagrangian advection on an unstructured mesh for ocean modelling. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 49, 119.	1.7	15
53	The tangent linear model for semi-Lagrangian schemes: linearizing the process of interpolation. Tellus, Series A: Dynamic Meteorology and Oceanography, 1996, 48, 74-95.	1.7	14
54	The Accuracy of a Finite-Element Vertical Discretization Scheme for Primitive Equation Models: Comparison with a Finite-Difference Scheme. Monthly Weather Review, 1983, 111, 2298-2318.	1.4	13

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55	A Generalized Family of Schemes that Eliminate the Spurious Resonant Response of Semi-Lagrangian Schemes to Orographic Forcing. Monthly Weather Review, 1995, 123, 3605-3613.	1.4	13
56	Deriving consistent approximate models of the global atmosphere using Hamilton's principle. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 2383-2387.	2.7	12
57	Impact of semi-Lagrangian trajectories on the discrete normal modes of a non-hydrostatic vertical-column model. Quarterly Journal of the Royal Meteorological Society, 2005, 131, 93-108.	2.7	11
58	An accurate interpolating scheme for semi-Lagrangian advection on an unstructured mesh for ocean modelling. Tellus, Series A: Dynamic Meteorology and Oceanography, 1997, 49, 119-138.	1.7	10
59	A two-dimensional mixed finite-element pair on rectangles. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 930-942.	2.7	10
60	Geophysically Realistic, Ellipsoidal, Analytically Tractable (GREAT) coordinates for atmospheric and oceanic modelling. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 1646-1657.	2.7	9
61	A Problem with the Robertâ€“Asselin Time Filter for Three-Time-Level Semi-Implicit Semi-Lagrangian Discretizations. Monthly Weather Review, 2004, 132, 600-610.	1.4	8
62	An improved regularization for time-staggered discretization and its link to the semi-implicit method. Atmospheric Science Letters, 2006, 7, 21-25.	1.9	8
63	Spheroidal and spherical geopotential approximations. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 2685-2692.	2.7	8
64	Energy and energy-like invariants for deep non-hydrostatic atmospheres. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 3495-3499.	2.7	7
65	A timeâ€staggered semiâ€Lagrangian discretization of the rotating shallowâ€water equations. Quarterly Journal of the Royal Meteorological Society, 2006, 132, 3107-3116.	2.7	7
66	Determining nearâ€boundary departure points in semiâ€Lagrangian models. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 1890-1896.	2.7	7
67	Exact stationary axisymmetric solutions of the Euler equations on Î²â€“Î³ planes. Atmospheric Science Letters, 2012, 13, 79-87.	1.9	7
68	The shallowâ€water equations in nonâ€spherical geometry with latitudinal variation of gravity. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 655-662.	2.7	6
69	Improving Variable-Resolution Finite-Element Semi-Lagrangian Integration Schemes by Pseudostaggering. Monthly Weather Review, 1990, 118, 2718-2731.	1.4	5
70	The tangent linear model for semi-Lagrangian schemes: linearizing the process of interpolation. Tellus, Series A: Dynamic Meteorology and Oceanography, 1996, 48, 74-95.	1.7	5
71	Preliminary Results from a Dry Global Variable-Resolution Primitive Equations Model. Atmosphere - Ocean, 1997, 35, 245-259.	1.6	5
72	Cubicâ€spline interpolation on a nonâ€uniform latitudeâ€“longitude grid: achieving crossâ€and circumâ€polar continuity. Atmospheric Science Letters, 2010, 11, 229-238.	1.9	5

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73	Exact axisymmetric solutions of the deepâ€•and shallowâ€atmosphere Euler equations in curvilinear and plane geometries. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 1113-1120.	2.7	5
74	Consistent quasiâ€shallow models of the global atmosphere in nonâ€spherical geopotential coordinates with complete Coriolis force. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 979-986.	2.7	5
75	Semi-Lagrangian integration schemes and their application to environmental flows. , 1990, , 63-79.		5
76	A Variable-Resolution Finite-Element Model of Frontogenesis. Monthly Weather Review, 1986, 114, 1340-1353.	1.4	4
77	AndrÃ© Robert (1929â€"1993): His Pioneering Contributions to Numerical Modelling. Atmosphere - Ocean, 1997, 35, 25-54.	1.6	4
78	Semi-implicit methods, nonlinear balance, and regularized equations. Atmospheric Science Letters, 2007, 8, 1-6.	1.9	3
79	Comments on Charron et al .'s three recent articles on deriving dynamically consistent equation sets. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 3425-3430.	2.7	3
80	Forms of the thermodynamic energy equation for moist air. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 386-393.	2.7	3
81	Modifying the conventional threeâ€timeâ€level semiâ€implicit semiâ€Lagrangian scheme to eliminate orographically induced spurious resonance. Atmosphere - Ocean, 1995, 33, 109-119.	1.6	2
82	Comments on 'A finite-element scheme for the vertical discretization in the semi-Lagrangian version of the ECMWF forecast model' by A. Untch and M. Hortal (April B, 2004, <B>130,</B> 1505â€"1530). Quarterly Journal of the Royal Meteorological Society, 2005, 131, 765-772.	2.7	2
83	Analysis of the response to orographic forcing of a timeâ€staggered semiâ€Lagrangian discretization of the rotating shallowâ€water equations. Quarterly Journal of the Royal Meteorological Society, 2006, 132, 3117-3126.	2.7	2
84	Analysis of a regularized, time-staggered discretization applied to a vertical slice model. Atmospheric Science Letters, 2006, 7, 86-92.	1.9	2
85	Dynamically consistent shallowâ€water equation sets in nonâ€spherical geometry with latitudinal variation of gravity. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 2429-2443.	2.7	2
86	Validity of anelastic and other equation sets as inferred from normal-mode analysis. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 2761-2775.	2.7	2
87	Numerical weather forecasting research in the Canadian weather service. Telematics and Informatics, 1985, 2, 279-287.	5.8	1
88	An Unsuspected Boundary-Induced Temporal Computational Mode in a Two-Time-Level Discretization. Monthly Weather Review, 2005, 133, 712-720.	1.4	1
89	Forecast models for intermediate-range forecasting. Advances in Space Research, 1992, 12, 233-242.	2.6	0
90	Deriving Significant-Level Geopotentials from Radiosonde Reports. Monthly Weather Review, 1995, 123, 222-229.	1.4	0