Roger K Smith

List of Publications by Year
in descending order

142 papers	4,851 citations	81900 39 h-index	114465 63 g-index
144 all docs	144 docs citations	144 times ranked	1484 citing authors

#	Article	IF	Citations
1	Tropical cyclone spinâ€up revisited. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 1321-1335.	2.7	273
2	Tropicalâ€cyclone intensification and predictability in three dimensions. Quarterly Journal of the Royal Meteorological Society, 2008, 134, 563-582.	2.7	228
3	The Morning Glory of the Gulf of Carpentaria: An Atmospheric Undular Bore. Monthly Weather Review, 1981, 109, 1726-1750.	1.4	139
4	The Pre-Depression Investigation of Cloud-Systems in the Tropics (PREDICT) Experiment: Scientific Basis, New Analysis Tools, and Some First Results. Bulletin of the American Meteorological Society, 2012, 93, 153-172.	3.3	139
5	Recent Developments in the Fluid Dynamics of Tropical Cyclones. Annual Review of Fluid Mechanics, 2017, 49, 541-574.	25.0	126
6	Balanced and unbalanced aspects of tropical cyclone intensification. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 1715-1731.	2.7	124
7	A critique of Emanuel's hurricane model and potential intensity theory. Quarterly Journal of the Royal Meteorological Society, 2008, 134, 551-561.	2.7	123
8	Do tropical cyclones intensify by WISHE?. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 1697-1714.	2.7	116
9	Dependence of tropical-cyclone intensification on the boundary-layer representation in a numerical model. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 1671-1685.	2.7	112
10	The dynamics of heat lows. Quarterly Journal of the Royal Meteorological Society, 1999, 125, 225-252.	2.7	110
11	Asymmetric and axisymmetric dynamics of tropical cyclones. Atmospheric Chemistry and Physics, 2013, 13, 12299-12341.	4.9	110
12	On the Movement and Low-Level Structure of Cold Fronts. Monthly Weather Review, 1988, 116, 1927-1944.	1.4	108
13	Hurricane boundary-layer theory. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 1665-1670.	2.7	95
14	A numerical study of tropical cyclone motion using a barotropic model. I: The role of vortex asymmetries. Quarterly Journal of the Royal Meteorological Society, 1990, 116, 337-362.	2.7	79
15	Sensitivity of tropicalâ€cyclone models to the surface drag coefficient. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 1945-1953.	2.7	78
16	Why Do Model Tropical Cyclones Grow Progressively in Size and Decay in Intensity after Reaching Maturity?. Journals of the Atmospheric Sciences, 2016, 73, 487-503.	1.7	77
17	An analysis of the observed lowâ€level structure of rapidly intensifying and mature hurricane <i>Earl</i> (2010). Quarterly Journal of the Royal Meteorological Society, 2014, 140, 2132-2146.	2.7	75
18	A simple model of the hurricane boundary layer revisited. Quarterly Journal of the Royal Meteorological Society, 2008, 134, 337-351.	2.7	74

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19	Balanced boundary layers used in hurricane models. Quarterly Journal of the Royal Meteorological Society, 2008, 134, 1385-1395.	2.7	71
20	Toward Clarity on Understanding Tropical Cyclone Intensification. Journals of the Atmospheric Sciences, 2015, 72, 3020-3031.	1.7	70
21	The surface boundary layer of a hurricane. Tellus, 2022, 20, 473.	0.8	69
22	Observations of the convective environment in developing and nonâ€developing tropical disturbances. Quarterly Journal of the Royal Meteorological Society, 2012, 138, 1721-1739.	2.7	69
23	Central Australian Cold Fronts. Monthly Weather Review, 1995, 123, 16-38.	1.4	68
24	A simple model of the hurricane boundary layer. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 1007-1027.	2.7	63
25	Buoyancy in tropical cyclones and other rapidly rotating atmospheric vortices. Dynamics of Atmospheres and Oceans, 2005, 40, 189-208.	1.8	63
26	Tropical Cyclone Eye Dynamics. Journals of the Atmospheric Sciences, 1980, 37, 1227-1232.	1.7	62
27	The role of cumulus convection in hurricanes and its representation in hurricane models. Reviews of Geophysics, 2000, 38, 465-489.	23.0	61
28	The efficiency of diabatic heating and tropical cyclone intensification. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 2081-2086.	2.7	58
29	The Morning Glory: An extraordinary atmospheric undular bore. Quarterly Journal of the Royal Meteorological Society, 1982, 108, 937-956.	2.7	56
30	Innerâ€core vacillation cycles during the intensification of Hurricane <i>Katrina</i>. Quarterly Journal of the Royal Meteorological Society, 2011, 137, 829-844.	2.7	53
31	An Observational Study of Tropical Cyclone Spinup in Supertyphoon Jangmi (2008) from 24 to 27 September. Monthly Weather Review, 2014, 142, 3-28.	1.4	52
32	A numerical study of rotating convection during tropical cyclogenesis. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 1255-1269.	2.7	49
33	An Analytical Theory of Tropical Cyclone Motion Using a Barotropic Model. Journals of the Atmospheric Sciences, 1990, 47, 1973-1986.	1.7	47
34	Accurate determination of a balanced axisymmetric vortex in a compressible atmosphere. Tellus, Series A: Dynamic Meteorology and Oceanography, 2006, 58, 98-103.	1.7	46
35	The dynamics of intensification in a Hurricane Weather Research and Forecasting simulation of Hurricane <i>Earl</i> (2010). Quarterly Journal of the Royal Meteorological Society, 2017, 143, 293-308.	2.7	45
36	Forced resonant second-order interaction between damped internal waves. Journal of Fluid Mechanics, 1972, 55, 589-608.	3.4	42

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37	An investigation of rotational influences on tropicalâ€cyclone size and intensity. Quarterly Journal of the Royal Meteorological Society, 2011, 137, 1841-1855.	2.7	42
38	Why Do Model Tropical Cyclones Intensify More Rapidly at Low Latitudes?. Journals of the Atmospheric Sciences, 2015, 72, 1783-1804.	1.7	41
39	Putting to rest <scp>WISHE</scp>â€ful misconceptions for tropical cyclone intensification. Journal of Advances in Modeling Earth Systems, 2015, 7, 92-109.	3.8	41
40	The role of dynamic pressure in generating fire wind. Journal of Fluid Mechanics, 1975, 68, 1.	3.4	39
41	Tropical cyclone convection: the effects of ambient vertical vorticity. Quarterly Journal of the Royal Meteorological Society, 2011, 137, 845-857.	2.7	38
42	Ocean Effects on Tropical Cyclone Intensification and Inner-Core Asymmetries. Journals of the Atmospheric Sciences, 2004, 61, 1245-1258.	1.7	37
43	A comparative study of atmospheric and laboratoryâ€analogue numerical tornadoâ€vortex models. Quarterly Journal of the Royal Meteorological Society, 1988, 114, 801-822.	2.7	37
44	A unified view of tropical cyclogenesis and intensification. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 450-462.	2.7	36
45	The development of potential vorticity in a hurricane-like vortex. Quarterly Journal of the Royal Meteorological Society, 1994, 120, 1255-1265.	2.7	35
46	Sensitivity of tropicalâ€cyclone models to the surface drag coefficient in different boundaryâ€layer schemes. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 792-804.	2.7	35
47	Tropicalâ€cyclone intensification and predictability in a minimal threeâ€dimensional model. Quarterly Journal of the Royal Meteorological Society, 2008, 134, 1661-1671.	2.7	34
48	Dependence of tropical cyclone intensification rate on seaâ€surface temperature. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 1618-1627.	2.7	34
49	On steadyâ€state tropical cyclones. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 2638-2649.	2.7	33
50	Tornadogenesis. Quarterly Journal of the Royal Meteorological Society, 1978, 104, 189-198.	2.7	32
51	Limitations of a linear model for the hurricane boundary layer. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 839-850.	2.7	32
52	A Minimal Three-Dimensional Tropical Cyclone Model. Journals of the Atmospheric Sciences, 2001, 58, 1924-1944.	1.7	30
53	A numerical study of tornadogenesis in a rotating thunderstorm. Quarterly Journal of the Royal Meteorological Society, 1979, 105, 107-127.	2.7	26
54	On the existence of the logarithmic surface layer in the inner core of hurricanes. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 72-81.	2.7	26

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55	Thermally driven vortices: A numerical study with application to dust-devil dynamics. Quarterly Journal of the Royal Meteorological Society, 1976, 102, 791-804.	2.7	25
56	The genesis of Typhoon Nuri as observed during the Tropical Cyclone Structure 2008 (TCS08) field experiment â€" Part 2: Observations of the convective environment. Atmospheric Chemistry and Physics, 2012, 12, 4001-4009.	4.9	25
57	The Cyclostrophic Adjustment of Vortices with Application to Tropical Cyclone Modification. Journals of the Atmospheric Sciences, 1981, 38, 2021-2030.	1.7	24
58	The role of boundaryâ€layer friction on tropical cyclogenesis and subsequent intensification. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 2524-2536.	2.7	24
59	A Simple Model of the Australian West Coast Trough. Monthly Weather Review, 1992, 120, 2042-2055.	1.4	24
60	A minimal axisymmetric hurricane model. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 2641-2661.	2.7	22
61	A caseâ€study of a monsoon low that formed over the sea and intensified over land as seen in ECMWF analyses. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 2244-2255.	2.7	22
62	The effects of initial vortex size on tropical cyclogenesis and intensification. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 2832-2845.	2.7	22
63	The dynamics of heat lows in simple background flows. Quarterly Journal of the Royal Meteorological Society, 2005, 131, 3147-3165.	2.7	21
64	Understanding hurricanes. Weather, 2016, 71, 219-223.	0.7	21
65	Southerly Nocturnal Wind Surges and Bores in Northeastern Australia. Monthly Weather Review, 1986, 114, 1501-1518.	1.4	20
66	Axisymmetric Balance Dynamics of Tropical Cyclone Intensification and Its Breakdown Revisited. Journals of the Atmospheric Sciences, 2018, 75, 3169-3189.	1.7	20
67	Comments on â€œHow Does the Boundary Layer Contribute to Eyewall Replacement Cycles in Axisymmetric Tropical Cyclones?â€• Journals of the Atmospheric Sciences, 2014, 71, 4682-4691.	1.7	19
68	Tropical cyclone evolution in a minimal axisymmetric model revisited. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 1505-1516.	2.7	19
69	The Importance of Three Physical Processes in a Minimal Three-Dimensional Tropical Cyclone Model. Journals of the Atmospheric Sciences, 2002, 59, 1825-1840.	1.7	18
70	The dynamics of heat lows over flat terrain. Quarterly Journal of the Royal Meteorological Society, 2008, 134, 2157-2172.	2.7	18
71	The diurnal evolution of cold fronts in the Australian subtropics. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 395-411.	2.7	18
72	Tropical convection: the effects of ambient vertical and horizontal vorticity. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 1756-1770.	2.7	18

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73	Tropical cyclone life cycle in a threeâ€dimensional numerical simulation. Quarterly Journal of the Royal Meteorological Society, 2021, 147, 3373-3393.	2.7	18
74	A numerical study of boundary effects on concentrated vortices with application to tornadoes and waterspouts. Quarterly Journal of the Royal Meteorological Society, 1975, 101, 313-324.	2.7	17
75	Tropical cyclone convection: the effects of a vortex boundaryâ€layer wind profile on deep convection. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 714-726.	2.7	17
76	The role of heating and cooling associated with ice processes on tropical cyclogenesis and intensification. Quarterly Journal of the Royal Meteorological Society, 2018, 144, 99-114.	2.7	17
77	A numerical study of deep convection in tropical cyclones. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 3138-3151.	2.7	16
78	Contribution of mean and eddy momentum processes to tropical cyclone intensification. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 3101-3117.	2.7	16
79	Upperâ€tropospheric inflow layers in tropical cyclones. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 3466-3487.	2.7	16
80	Orographically-forced cold fronts ? Mean structure and motion. Boundary-Layer Meteorology, 1985, 32, 57-83.	2.3	15
81	Simulations of low-level convergence lines over north-eastern Australia. Quarterly Journal of the Royal Meteorological Society, 2006, 132, 691-707.	2.7	15
82	Tropical cyclone flow asymmetries induced by a uniform flow revisited. Journal of Advances in Modeling Earth Systems, 2015, 7, 1265-1284.	3.8	14
83	Comments on â€œRevisiting the Balanced and Unbalanced Aspects of Tropical Cyclone Intensificationâ€• Journals of the Atmospheric Sciences, 2018, 75, 2491-2496.	1.7	14
84	Effects of vertical differencing in a minimal hurricane model. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 1051-1069.	2.7	13
85	Low-Level Convergence Lines over Northeastern Australia. Part I: The North Australian Cloud Line. Monthly Weather Review, 2006, 134, 3092-3108.	1.4	13
86	Axisymmetric balance dynamics of tropical cyclone intensification: Diabatic heating versus surface friction. Quarterly Journal of the Royal Meteorological Society, 2018, 144, 2350-2357.	2.7	13
87	Low-Level Convergence Lines over Northeastern Australia. Part II: Southerly Disturbances. Monthly Weather Review, 2006, 134, 3109-3124.	1.4	13
88	Meso-scale surface wind changes associated with the passage of cold fronts along the eastern side of the Southern Alps, New Zealand. Meteorology and Atmospheric Physics, 1990, 42, 133-143.	2.0	12
89	Numerical study of the spinâ€up of a tropical low over land during the Australian monsoon. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 2021-2032.	2.7	12
90	On the hypothesized outflow control of tropical cyclone intensification. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 1309-1322.	2.7	12

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91	A parameterization of the boundary layer of a tropical cyclone. Boundary-Layer Meteorology, 1975, 8, 3-19.	2.3	11
92	On a theory of amplitude vacillation in baroclinic waves. Journal of Fluid Mechanics, 1977, 79, 289-306.	3.4	11
93	Linear and weakly nonlinear internal wave theories applied to â€œmorning gloryâ€• waves. Geophysical and Astrophysical Fluid Dynamics, 1985, 33, 123-143.	1.2	11
94	A comparison between frontogenesis in the two-dimensional Eady model of baroclinic instability and summertime cold fronts in the Australian region. Quarterly Journal of the Royal Meteorological Society, 1986, 112, 293-313.	2.7	11
95	The dynamics of heat lows over elevated terrain. Quarterly Journal of the Royal Meteorological Society, 2011, 137, 250-263.	2.7	11
96	Consequences of regularizing the Sawyerâ€"Eliassen equation in balance models for tropical cyclone behaviour. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 3766-3779.	2.7	11
97	A comparative study of atmospheric and laboratory-analogue numerical tornado-vortex models. Quarterly Journal of the Royal Meteorological Society, 1988, 114, 801-822.	2.7	11
98	The surface boundary layer of a hurricane. II. Tellus, 1970, 22, 288-297.	0.8	10
99	Numerical simulations of tornado-like vortices. Part 1: Vortex evolution. Geophysical and Astrophysical Fluid Dynamics, 1983, 27, 253-284.	1.2	10
100	A DRY COLDâ€FRONT OVER SOUTHERN BAVARIA. Weather, 1988, 43, 255-261.	0.7	10
101	Vortex motion in relation to the absolute vorticity gradient of the vortex environment. Quarterly Journal of the Royal Meteorological Society, 1993, 119, 207-215.	2.7	10
102	How important is the isothermal expansion effect in elevating equivalent potential temperature in the hurricane inner core?. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 70-74.	2.7	10
103	Sensitivity of tropicalâ€cyclone intensification to perturbations in the surface drag coefficient. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 407-415.	2.7	10
104	Comments on â€œNonlinear Response of a Tropical Cyclone Vortex to Prescribed Eyewall Heating with and without Surface Friction in TCM4: Implications for Tropical Cyclone Intensificationâ€• Journals of the Atmospheric Sciences, 2016, 73, 5101-5103.	1.7	10
105	Tropical cyclogenesis at and near the Equator. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 1846-1864.	2.7	10
106	Structure and Evolution of North Australian Cloud Lines Observed during AMEX Phase I. Monthly Weather Review, 1989, 117, 1181-1192.	1.4	9
107	The Importance of the Boundary Layer Parameterization in the Prediction of Low-Level Convergence Lines. Monthly Weather Review, 2008, 136, 2173-2185.	1.4	9
108	Tropical low formation and intensification over land as seen in ECMWF analyses. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 772-784.	2.7	9

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109	On the Applicability of Linear, Axisymmetric Dynamics in Intensifying and Mature Tropical Cyclones. Fluids, 2017, 2, 69.	1.7	9
110	On the choice of radial boundary conditions for numerical models of sub-synoptic vortex flows in the atmosphere, with application to dust devils. Quarterly Journal of the Royal Meteorological Society, 1977, 103, 499-510.	2.7	8
111	THE 1979 MORNING GLORY EXPEDITION. Weather, 1981, 36, 130-136.	0.7	8
112	An idealized numerical study of tropical cyclogenesis and evolution at the Equator. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 685-699.	2.7	8
113	The generalized Ekman model for the tropical cyclone boundary layer revisited: The myth of inertial stability as a restoring force. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 3435-3449.	2.7	8
114	The surface boundary layer of a hurricane. II. Tellus, 1970, 22, 288-297.	0.8	8
115	Comments on â€œAn Evaluation of Hurricane Superintensity in Axisymmetric Numerical Modelsâ€. Journals of the Atmospheric Sciences, 2020, 77, 1887-1892.	1.7	8
116	MesoLAPS Predictions of Low-Level Convergence Lines over Northeastern Australia. Weather and Forecasting, 2007, 22, 910-927.	1.4	7
117	The generation of kinetic energy in tropical cyclones revisited. Quarterly Journal of the Royal Meteorological Society, 2018, 144, 2481-2490.	2.7	7
118	Toward Understanding the Dynamics of Spinup in Emanuelâ€™s Tropical Cyclone Model. Journals of the Atmospheric Sciences, 2019, 76, 3089-3093.	1.7	7
119	Effective buoyancy and CAPE: Some implications for tropical cyclones. Quarterly Journal of the Royal Meteorological Society, 2022, 148, 2118-2131.	2.7	7
120	Quasi steady-state hurricanes revisited. Tropical Cyclone Research and Review, 2019, 8, 1-17.	2.2	6
121	The generalized Ekman model for the tropical cyclone boundary layer revisited: Addendum. Quarterly Journal of the Royal Meteorological Society, 2021, 147, 1471-1476.	2.7	6
122	Numerical simulations of tornado-like vortices. Part II: Two cell vortices. Geophysical and Astrophysical Fluid Dynamics, 1983, 27, 285-298.	1.2	5
123	Azimuthally averaged structure of Hurricane <i>Edouard</i> (2014) just after peak intensity. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 211-216.	2.7	5
124	Tornado forum. Nature, 1976, 260, 457-458.	27.8	4
125	The formation of a multicell thunderstorm behind a seaâ€breeze front. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 2176-2188.	2.7	4
126	Comments on â€œSymmetric and Asymmetric Structures of Hurricane Boundary Layer in Coupled Atmosphereâ€“Waveâ€“Ocean Models and Observationsâ€. Journals of the Atmospheric Sciences, 2014, 71, 2782-2785.	1.7	4

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127	A caseâ€study of a tropical low over northern Australia. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 1702-1718.	2.7	4
128	Response of a tropical cyclone to a subsurface ocean eddy and the role of boundary layer dynamics. Quarterly Journal of the Royal Meteorological Society, 2022, 148, 378-402.	2.7	4
129	Minimal conceptual models for tropical cyclone intensification. Tropical Cyclone Research and Review, 2022, 11, 61-75.	2.2	4
130	Terrain influences on the dynamics of heat lows. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 1779-1793.	2.7	3
131	On an analytical model for the rapid intensification of tropical cyclones. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 549-551.	2.7	3
132	Comparison of an axisymmetric hurricane model with the corresponding slab-symmetric ITCZ model. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 2335-2347.	2.7	2
133	Mean radiosonde soundings for the Australian monsoon/cyclone season. International Journal of Climatology, 2017, 37, 66-78.	3.5	2
134	On modelling tornadoes. Quarterly Journal of the Royal Meteorological Society, 1970, 96, 544-548.	2.7	1
135	Comment on the paper entitled â€˜Tornadogenesisâ€™ by R. K. Smith and L. M. Leslie (Q.J., 104, 189â€“199). Quarterly Journal of the Royal Meteorological Society, 1979, 105, 310-313.	2.7	1
136	Solutions of the Eliassen balance equation for inertially and/or symmetrically stable and unstable vortices. Quarterly Journal of the Royal Meteorological Society, 2021, 147, 2760-2771.	2.7	1
137	Upperâ€level trajectories in the prototype problem for tropical cyclone intensification. Quarterly Journal of the Royal Meteorological Society, 2021, 147, 2978-2987.	2.7	1
138	A numerical study of boundary effects on concentrated vortices with application to tornadoes and waterspouts. Quarterly Journal of the Royal Meteorological Society, 1975, 101, 313-324.	2.7	1
139	Tornadogenesis. Quarterly Journal of the Royal Meteorological Society, 1978, 104, 189-198.	2.7	1
140	A numerical study of tornadogenesis in a rotating thunderstorm. Quarterly Journal of the Royal Meteorological Society, 1979, 105, 107-127.	2.7	1
141	The Morning Glory: an extraordinary atmospheric undular bore. Quarterly Journal of the Royal Meteorological Society, 1982, 108, 937-956.	2.7	1
142	Southerly nocturnal bores over northeastern Australia. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 395-407.	2.7	0