

Alan K Betts

List of Publications by Year in descending order

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131
papers

11,173
citations

34016

52
h-index

30010

103
g-index

135
all docs

135
docs citations

135
times ranked

8920
citing authors

#	ARTICLE	IF	CITATIONS
1	Modeling the Exchanges of Energy, Water, and Carbon Between Continents and the Atmosphere. <i>Science</i> , 1997, 275, 502-509.	6.0	1,280
2	Modeling of land surface evaporation by four schemes and comparison with FIFE observations. <i>Journal of Geophysical Research</i> , 1996, 101, 7251-7268.	3.3	910
3	A Revised Hydrology for the ECMWF Model: Verification from Field Site to Terrestrial Water Storage and Impact in the Integrated Forecast System. <i>Journal of Hydrometeorology</i> , 2009, 10, 623-643.	0.7	695
4	The land surface-atmosphere interaction: A review based on observational and global modeling perspectives. <i>Journal of Geophysical Research</i> , 1996, 101, 7209-7225.	3.3	600
5	The Anomalous Rainfall over the United States during July 1993: Sensitivity to Land Surface Parameterization and Soil Moisture Anomalies. <i>Monthly Weather Review</i> , 1996, 124, 362-383.	0.5	424
6	Non-precipitating cumulus convection and its parameterization. <i>Quarterly Journal of the Royal Meteorological Society</i> , 1973, 99, 178-196.	1.0	375
7	Albedo over the boreal forest. <i>Journal of Geophysical Research</i> , 1997, 102, 28901-28909.	3.3	368
8	Convection in GATE. <i>Reviews of Geophysics</i> , 1981, 19, 541-576.	9.0	345
9	A new convective adjustment scheme, Part II: Single column tests using GATE wave, BOMEX, ATEX and arctic air-mass data sets. <i>Quarterly Journal of the Royal Meteorological Society</i> , 1986, 112, 693-709.	1.0	254
10	Climatic Equilibrium of the Atmospheric Convective Boundary Layer over a Tropical Ocean. <i>Journals of the Atmospheric Sciences</i> , 1989, 46, 2621-2641.	0.6	227
11	Understanding Hydrometeorology Using Global Models. <i>Bulletin of the American Meteorological Society</i> , 2004, 85, 1673-1688.	1.7	212
12	Assessment of the Land Surface and Boundary Layer Models in Two Operational Versions of the NCEP Eta Model Using FIFE Data. <i>Monthly Weather Review</i> , 1997, 125, 2896-2916.	0.5	196
13	An Agenda for Land Surface Hydrology Research and a Call for the Second International Hydrological Decade. <i>Bulletin of the American Meteorological Society</i> , 1999, 80, 2043-2058.	1.7	188
14	FIFE Surface Climate and Site-Average Dataset 1987-89. <i>Journals of the Atmospheric Sciences</i> , 1998, 55, 1091-1108.	0.6	187
15	Saturation Point Analysis of Moist Convective Overturning. <i>Journals of the Atmospheric Sciences</i> , 1982, 39, 1484-1505.	0.6	183
16	Impact of deforestation in the Amazon basin on cloud climatology. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 3670-3674.	3.3	143
17	Thermodynamic constraint on the cloud liquid water feedback in climate models. <i>Journal of Geophysical Research</i> , 1987, 92, 8483-8485.	3.3	129
18	The FIFE surface diurnal cycle climate. <i>Journal of Geophysical Research</i> , 1995, 100, 25679.	3.3	128

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19	Evaluation of the diurnal cycle of precipitation, surface thermodynamics, and surface fluxes in the ECMWF model using LBA data. <i>Journal of Geophysical Research</i> , 2002, 107, LBA 12-1.	3.3	123
20	Land-Surface-Atmosphere Coupling in Observations and Models. <i>Journal of Advances in Modeling Earth Systems</i> , 2009, 1, .	1.3	123
21	Parametric Interpretation of Trade-Wind Cumulus Budget Studies. <i>Journals of the Atmospheric Sciences</i> , 1975, 32, 1934-1945.	0.6	122
22	Impact on ECMWF forecasts of changes to the albedo of the boreal forests in the presence of snow. <i>Journal of Geophysical Research</i> , 1999, 104, 27803-27810.	3.3	112
23	Mean climate and transience in the tropics of the UGAMP GCM: Sensitivity to convective parametrization. <i>Quarterly Journal of the Royal Meteorological Society</i> , 1994, 120, 881-922.	1.0	111
24	Conserved Variable Analysis of the Convective Boundary Layer Thermodynamic Structure over the Tropical Oceans. <i>Journals of the Atmospheric Sciences</i> , 1987, 44, 83-99.	0.6	98
25	Model of the Thermodynamic Structure of the Trade-Wind Boundary Layer: Part I. Theoretical Formulation and Sensitivity Tests. <i>Journals of the Atmospheric Sciences</i> , 1979, 36, 73-89.	0.6	94
26	Evaluation of the ERA-40 Surface Water Budget and Surface Temperature for the Mackenzie River Basin. <i>Journal of Hydrometeorology</i> , 2003, 4, 1194-1211.	0.7	90
27	Comparison between the land surface response of the ECMWF model and the FIFE-1987 data. <i>Quarterly Journal of the Royal Meteorological Society</i> , 1993, 119, 975-1001.	1.0	84
28	Study of diurnal cycle of convective precipitation over Amazonia using a single column model. <i>Journal of Geophysical Research</i> , 2002, 107, ACL 25-1-ACL 25-13.	3.3	84
29	Comparison of ERA40 and NCEP/DOE near-surface data sets with other ISLSCP-II data sets. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	84
30	Comparison of river basin hydrometeorology in ERA-Interim and ERA-40 reanalyses with observations. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	84
31	NCEP-NCAR and ECMWF Reanalysis Surface Water and Energy Budgets for the Mississippi River Basin. <i>Journal of Hydrometeorology</i> , 2000, 1, 88-94.	0.7	82
32	The Thermodynamic Transformation of the Tropical Subcloud Layer by Precipitation and Downdrafts. <i>Journals of the Atmospheric Sciences</i> , 1976, 33, 1008-1020.	0.6	80
33	Budget analysis of FIFE 1987 sonde data. <i>Journal of Geophysical Research</i> , 1994, 99, 3655.	3.3	73
34	Comparison of NCEP-NCAR Reanalysis with 1987 FIFE Data. <i>Monthly Weather Review</i> , 1996, 124, 1480-1498.	0.5	71
35	Radiosonde boundary layer budgets above a boreal forest. <i>Journal of Geophysical Research</i> , 1997, 102, 29205-29212.	3.3	69
36	Land-surface, boundary layer, and cloud-field coupling over the southwestern Amazon in ERA-40. <i>Journal of Geophysical Research</i> , 2005, 110, n/a-n/a.	3.3	67

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37	Idealized Model for Equilibrium Boundary Layer over Land. <i>Journal of Hydrometeorology</i> , 2000, 1, 507-523.	0.7	65
38	Characterization of increased persistence and intensity of precipitation in the northeastern United States. <i>Geophysical Research Letters</i> , 2015, 42, 1888-1893.	1.5	65
39	Air-Sea Interaction during an Extreme Cold Air Outbreak from the Eastern Coast of the United States. <i>Monthly Weather Review</i> , 1990, 118, 324-342.	0.5	64
40	Estimates of net CO ₂ flux by application of equilibrium boundary layer concepts to CO ₂ and water vapor measurements from a tall tower. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	64
41	Modeling Subcloud Layer Structure and Interaction with a Shallow Cumulus Layer. <i>Journals of the Atmospheric Sciences</i> , 1976, 33, 2363-2382.	0.6	62
42	A Cloudiness Transition in a Marine Boundary Layer. <i>Journals of the Atmospheric Sciences</i> , 1990, 47, 1480-1497.	0.6	62
43	Surface diurnal cycle and boundary layer structure over Rondônia during the rainy season. <i>Journal of Geophysical Research</i> , 2002, 107, LBA 32-1.	3.3	61
44	Impact of the ECMWF reanalysis soil water on forecasts of the July 1993 Mississippi flood. <i>Journal of Geophysical Research</i> , 1999, 104, 19361-19366.	3.3	60
45	Intercomparison of water and energy budgets for five Mississippi subbasins between ECMWF reanalysis (ERA-40) and NASA Data Assimilation Office fvGCM for 1990-1999. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	60
46	ISLSCP Initiative II global data sets: Surface boundary conditions and atmospheric forcings for land-atmosphere studies. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	60
47	Mixing Line Analysis of Clouds and Cloudy Boundary Layers. <i>Journals of the Atmospheric Sciences</i> , 1985, 42, 2751-2763.	0.6	59
48	Evaluation of land-surface interaction in ECMWF and NCEP/NCAR reanalysis models over grassland (FIFE) and boreal forest (BOREAS). <i>Journal of Geophysical Research</i> , 1998, 103, 23079-23085.	3.3	58
49	Controls on Evaporation in a Boreal Spruce Forest. <i>Journal of Climate</i> , 1999, 12, 1601-1618.	1.2	57
50	Basin-scale surface water and energy budgets for the Mississippi from the ECMWF reanalysis. <i>Journal of Geophysical Research</i> , 1999, 104, 19293-19306.	3.3	56
51	Near-Surface Biases in ERA5 Over the Canadian Prairies. <i>Frontiers in Environmental Science</i> , 2019, 7, .	1.5	56
52	Transport of ozone to the surface by convective downdrafts at night. <i>Journal of Geophysical Research</i> , 2002, 107, LBA 13-1.	3.3	55
53	Coupling of water vapor convergence, clouds, precipitation, and land-surface processes. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	55
54	Climate-Convection Feedbacks: Some Further Issues. <i>Climatic Change</i> , 1998, 39, 35-38.	1.7	54

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55	Surface Energy and Water Balance for the Arkansasâ€“Red River Basin from the ECMWF Reanalysis. <i>Journal of Climate</i> , 1998, 11, 2881-2897.	1.2	52
56	Hydrometeorology of the Amazon in ERA-40. <i>Journal of Hydrometeorology</i> , 2005, 6, 764-774.	0.7	51
57	Relationships between Land Surface and Near-Surface Atmospheric Variables in the NCEP North American Regional Reanalysis. <i>Journal of Hydrometeorology</i> , 2007, 8, 1184-1203.	0.7	50
58	Impact of agriculture, forest and cloud feedback on the surface energy budget in BOREAS. <i>Agricultural and Forest Meteorology</i> , 2007, 142, 156-169.	1.9	48
59	Near-surface climate in the boreal forest. <i>Journal of Geophysical Research</i> , 2001, 106, 33529-33541.	3.3	46
60	Boundary Layer Thermodynamics of a High Plains Severe Storm. <i>Monthly Weather Review</i> , 1984, 112, 2199-2211.	0.5	45
61	Coupling of winter climate transitions to snow and clouds over the Prairies. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014, 119, 1118-1139.	1.2	45
62	Eta model estimated land surface processes and the hydrologic cycle of the Mississippi basin. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	42
63	Cloud radiative forcing of the diurnal cycle climate of the Canadian Prairies. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 8935-8953.	1.2	42
64	Impact of land use change on the diurnal cycle climate of the Canadian Prairies. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 11,996.	1.2	42
65	Climate coupling between temperature, humidity, precipitation, and cloud cover over the Canadian Prairies. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014, 119, 13,305.	1.2	42
66	Thermodynamics of Mixed Stratocumulus Layers: Saturation Point Budgets. <i>Journals of the Atmospheric Sciences</i> , 1983, 40, 2655-2670.	0.6	41
67	Progress in understanding land-surface-atmosphere coupling from LBA research. <i>Journal of Advances in Modeling Earth Systems</i> , 2010, 2, .	1.3	38
68	Diurnal variation of California coastal stratocumulus from two days of boundary layer soundings. <i>Tellus, Series A: Dynamic Meteorology and Oceanography</i> , 1990, 42, 302-304.	0.8	35
69	Coupling between CO ₂ , water vapor, temperature, and radon and their fluxes in an idealized equilibrium boundary layer over land. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	35
70	A Review of the Tropical Boundary Layer and Cumulus Convection: Structure, Parameterization, and Modeling. <i>Bulletin of the American Meteorological Society</i> , 1974, 55, 1195-1205.	1.7	35
71	Estimation of effective roughness length for heat and momentum from FIFE data. <i>Atmospheric Research</i> , 1993, 30, 251-261.	1.8	34
72	Comparison of the Land-Surface Interaction in the ECMWF Reanalysis Model with the 1987 FIFE Data. <i>Monthly Weather Review</i> , 1998, 126, 186-198.	0.5	34

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73	Thermodynamic Classification of Tropical Convective Soundings. <i>Monthly Weather Review</i> , 1974, 102, 760-764.	0.5	32
74	Relation between Mean Boundary-Layer Structure and Cloudiness at the R/V Valdivia during ASTEX. <i>Journals of the Atmospheric Sciences</i> , 1995, 52, 2752-2762.	0.6	32
75	First International Satellite Land Surface Climatology Field Experiment 1987 sonde budget revisited. <i>Journal of Geophysical Research</i> , 1996, 101, 23285-23288.	3.3	32
76	Impact of BOREAS on the ECMWF forecast model. <i>Journal of Geophysical Research</i> , 2001, 106, 33593-33604.	3.3	32
77	Cloud Thermodynamic Models in Saturation Point Coordinates. <i>Journals of the Atmospheric Sciences</i> , 1982, 39, 2182-2191.	0.6	31
78	Comparison of regional surface fluxes from boundary-layer budgets and aircraft measurements above boreal forest. <i>Journal of Geophysical Research</i> , 1997, 102, 29213-29218.	3.3	31
79	A Probabilistic Bulk Model of Coupled Mixed Layer and Convection. Part II: Shallow Convection Case. <i>Journals of the Atmospheric Sciences</i> , 2013, 70, 1557-1576.	0.6	30
80	Tropical boundary layer equilibrium in the last ice age. <i>Journal of Geophysical Research</i> , 1992, 97, 2529-2534.	3.3	29
81	Intercomparison of BOREAS northern and southern study area surface fluxes in 1994. <i>Journal of Geophysical Research</i> , 2001, 106, 33543-33550.	3.3	29
82	Triggering Deep Convection with a Probabilistic Plume Model. <i>Journals of the Atmospheric Sciences</i> , 2014, 71, 3881-3901.	0.6	29
83	Further Comments on "A Comparison of the Equivalent Potential Temperature and the Static Energy". <i>Journals of the Atmospheric Sciences</i> , 1974, 31, 1713-1715.	0.6	28
84	Hydroclimatic variability and predictability: a survey of recent research. <i>Hydrology and Earth System Sciences</i> , 2017, 21, 3777-3798.	1.9	28
85	Evaluation of Daily Precipitation from the ERA5 Global Reanalysis against GHCN Observations in the Northeastern United States. <i>Climate</i> , 2020, 8, 148.	1.2	28
86	Assessing land-surface-atmosphere coupling in the ERA-40 reanalysis with boreal forest data. <i>Agricultural and Forest Meteorology</i> , 2006, 140, 365-382.	1.9	27
87	Saturation Point Structure of Marine Stratocumulus Clouds. <i>Journals of the Atmospheric Sciences</i> , 1988, 45, 1156-1175.	0.6	24
88	Aircraft encounters with strong coherent vortices over the boreal forest. <i>Journal of Geophysical Research</i> , 1997, 102, 29231-29234.	3.3	22
89	A Probabilistic Bulk Model of Coupled Mixed Layer and Convection. Part I: Clear-Sky Case. <i>Journals of the Atmospheric Sciences</i> , 2013, 70, 1543-1556.	0.6	22
90	Analysis of near-surface biases in ERA-Interim over the Canadian prairies. <i>Journal of Advances in Modeling Earth Systems</i> , 2017, 9, 2158-2173.	1.3	21

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91	Empirical Formula for Saturation Pseudoadiabats and Saturation Equivalent Potential Temperature. Journal of Applied Meteorology, 1973, 12, 731-732.	1.1	19
92	Hydrological Budgets and Surface Energy Balance of Seven Subbasins of the Mackenzie River from the ECMWF Model. Journal of Hydrometeorology, 2000, 1, 47-60.	0.7	19
93	Radiative scaling of the nocturnal boundary layer and the diurnal temperature range. Journal of Geophysical Research, 2006, 111, .	3.3	19
94	How well does the ERA40 surface water budget compare to observations in the Amazon River basin?. Journal of Geophysical Research, 2008, 113, .	3.3	19
95	Vermont Climate Change Indicators. Weather, Climate, and Society, 2011, 3, 106-115.	0.5	19
96	The Parameterization of Deep Convection. , 1997, , 255-279.		19
97	A Mesoscale Budget Study of Cumulus Convection. Monthly Weather Review, 1978, 106, 1317-1331.	0.5	17
98	Thermodynamic Budget Diagrams for the Hurricane Subcloud Layer. Journals of the Atmospheric Sciences, 1987, 44, 842-849.	0.6	17
99	Relation between equilibrium evaporation and the saturation pressure budget. Boundary-Layer Meteorology, 1994, 71, 235-245.	1.2	16
100	An equilibrium model for the coupled ocean-atmosphere boundary layer in the tropics. Journal of Geophysical Research, 1991, 96, 3151-3163.	3.3	15
101	The Density Temperature and the Dry and Wet Virtual Adiabats. Monthly Weather Review, 1991, 119, 169-175.	0.5	15
102	Observational study of land-surface-cloud-atmosphere coupling on daily timescales. Frontiers in Earth Science, 2015, 3, .	0.8	15
103	Revisiting Hydrometeorology Using Cloud and Climate Observations. Journal of Hydrometeorology, 2017, 18, 939-955.	0.7	14
104	Seasonal climate transitions in New England. Weather, 2011, 66, 245-248.	0.6	13
105	Idealized model for changes in equilibrium temperature, mixed layer depth, and boundary layer cloud over land in a doubled CO ₂ climate. Journal of Geophysical Research, 2010, 115, .	3.3	12
106	Observationally based evaluation of NWP reanalyses in modeling cloud properties over the Southern Great Plains. Journal of Geophysical Research, 2012, 117, .	3.3	11
107	A Linear Spectral Model of Tropical Mesoscale Systems: Sensitivity Studies. Journals of the Atmospheric Sciences, 1984, 41, 1704-1716.	0.6	10
108	Annual Climatology of the Diurnal Cycle on the Canadian Prairies. Frontiers in Earth Science, 2016, 4, .	0.8	10

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109	Trade Cumulus: Observations and Modelling. , 1997, , 99-126.		9
110	The Boreal Climate. Global Change - the IGBP Series, 2004, , 93-114.	2.1	7
111	The impact of clouds, land use and snow cover on climate in the Canadian Prairies. Advances in Science and Research, 0, 13, 37-42.	1.0	7
112	Bridging the climate information gap: a framework for engaging knowledge brokers and decision makers in state climate assessments. Climatic Change, 2016, 138, 383-395.	1.7	5
113	An Analog Approach for Weather Estimation Using Climate Projections and Reanalysis Data. Journal of Applied Meteorology and Climatology, 2019, 58, 1763-1777.	0.6	5
114	Environmental Journalism Revisited. , 2012, , 382-390.		5
115	Idealized model for stratocumulus cloud layer thickness. Tellus, Series A: Dynamic Meteorology and Oceanography, 1989, 41A, 246-254.	0.8	3
116	Surface diurnal cycle over Venezuela. Meteorology and Atmospheric Physics, 1998, 67, 213-216.	0.9	3
117	Integrating solar energy and climate research into science education. Earth's Future, 2016, 4, 2-13.	2.4	3
118	A Relationship Between Stratification, Cloud Depth, and Permitted Cloud Radii. Journal of Applied Meteorology, 1973, 12, 890-893.	1.1	2
119	Mean inversion strength of the convective boundary layer over the oceans. Quarterly Journal of the Royal Meteorological Society, 1989, 115, 997-998.	1.0	2
120	Comparison of BOREAS and Atmospheric Environment Service humidity sensors at Meadow Lake, Saskatchewan. Journal of Geophysical Research, 1997, 102, 28911-28913.	3.3	2
121	Evaluation of the FLake Model in ERA5 for Lake Champlain. Frontiers in Environmental Science, 2020, 8, .	1.5	2
122	Climate change and society. AIMS Geosciences, 2021, 7, 194-218.	0.4	2
123	Vector Representation of Trade Cumulus Thermodynamic Fluxes. Monthly Weather Review, 1985, 113, 2173-2175.	0.5	1
124	A Lagged Mixing Parameterization for the Dry Convective Boundary Layer. Monthly Weather Review, 1995, 123, 1912-1915.	0.5	1
125	Communicating climate science. Eos, 2011, 92, 203-204.	0.1	1
126	Understanding Landâ€™s Atmosphereâ€™s Climate Coupling from the Canadian Prairie Dataset. Environments - MDPI, 2018, 5, 129.	1.5	1

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127	Convective Overturning and the Saturation Point. , 1982, , 117-133.		1
128	Idealized model for stratocumulus cloud layer thickness. Tellus, Series A: Dynamic Meteorology and Oceanography, 1989, 41, 246-254.	0.8	0
129	Land-surface-cloud coupling and climate change. IOP Conference Series: Earth and Environmental Science, 2009, 6, 082004.	0.2	0
130	Correction to "Observationally based evaluation of NWP reanalyses in modeling cloud properties over the Southern Great Plains" Journal of Geophysical Research, 2012, 117, n/a-n/a.	3.3	0
131	A Proposal for Communicating Science. Bulletin of the American Meteorological Society, 0, , 110610140626057.	1.7	0