Robert M Banta

List of Publications by Year
in descending order

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107 papers	7,688 citations	43973 48 h-index	53109 85 g-index
108 all docs	108 docs citations	108 times ranked	5246 citing authors

#	Article	IF	Citations
1	CASES-99: A Comprehensive Investigation of the Stable Nocturnal Boundary Layer. Bulletin of the American Meteorological Society, 2002, 83, 555-581.	1.7	418
2	Methane emissions estimate from airborne measurements over a western United States natural gas field. Geophysical Research Letters, 2013, 40, 4393-4397.	1.5	414
3	Nocturnal Low-Level Jet Characteristics Over Kansas During Cases-99. Boundary-Layer Meteorology, 2002, 105, 221-252.	1.2	302
4	High winter ozone pollution from carbonyl photolysis in an oil and gas basin. Nature, 2014, 514, 351-354.	13.7	265
5	Effect of petrochemical industrial emissions of reactive alkenes and NOxon tropospheric ozone formation in Houston, Texas. Journal of Geophysical Research, 2003, 108, .	3.3	263
6	A new look at methane and nonmethane hydrocarbon emissions from oil and natural gas operations in the Colorado Denverâ€Julesburg Basin. Journal of Geophysical Research D: Atmospheres, 2014, 119, 6836-6852.	1.2	257
7	Turbulence Regimes and Turbulence Intermittency in the Stable Boundary Layer during CASES-99. Journals of the Atmospheric Sciences, 2012, 69, 338-351.	0.6	248
8	Turbulent Velocity-Variance Profiles in the Stable Boundary Layer Generated by a Nocturnal Low-Level Jet. Journals of the Atmospheric Sciences, 2006, 63, 2700-2719.	0.6	226
9	A Bad Air Day in Houston. Bulletin of the American Meteorological Society, 2005, 86, 657-670.	1.7	191
10	Atmospheric Disturbances that Generate Intermittent Turbulence in Nocturnal Boundary Layers. Boundary-Layer Meteorology, 2004, 110, 255-279.	1.2	185
11	High-Resolution Doppler Lidar for Boundary Layer and Cloud Research. Journal of Atmospheric and Oceanic Technology, 2001, 18, 376-393.	0.5	177
12	Doppler Lidar Estimation of Mixing Height Using Turbulence, Shear, and Aerosol Profiles. Journal of Atmospheric and Oceanic Technology, 2009, 26, 673-688.	0.5	166
13	Intermittent Turbulence Associated with a Density Current Passage in the Stable Boundary Layer. Boundary-Layer Meteorology, 2002, 105, 199-219.	1.2	159
14	Understanding high wintertime ozone pollution events in an oil- and natural gas-producing region of the western US. Atmospheric Chemistry and Physics, 2015, 15, 411-429.	1.9	154
15	Daytime buildup and nighttime transport of urban ozone in the boundary layer during a stagnation episode. Journal of Geophysical Research, 1998, 103, 22519-22544.	3.3	141
16	Evolution of the Monterey Bay Sea-Breeze Layer As Observed by Pulsed Doppler Lidar. Journals of the Atmospheric Sciences, 1993, 50, 3959-3982.	0.6	132
17	Relationship between Low-Level Jet Properties and Turbulence Kinetic Energy in the Nocturnal Stable Boundary Layer. Journals of the Atmospheric Sciences, 2003, 60, 2549-2555.	0.6	132
18	Shear-Flow Instability in the Stable Nocturnal Boundary Layer as Observed by Doppler Lidar during CASES-99. Journals of the Atmospheric Sciences, 2003, 60, 16-33.	0.6	121

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19	The Structure of the Near-Neutral Atmospheric Surface Layer. Journals of the Atmospheric Sciences, 2004, 61, 699-714.	0.6	120
20	Quantifying Wind Turbine Wake Characteristics from Scanning Remote Sensor Data. Journal of Atmospheric and Oceanic Technology, 2014, 31, 765-787.	0.5	120
21	Smoke-Column Observations from Two Forest Fires Using Doppler Lidar and Doppler Radar. Journal of Applied Meteorology and Climatology, 1992, 31, 1328-1349.	1.7	110
22	Daytime Boundary-Layer Evolution over Mountainous Terrain. Part 1: Observations of the Dry Circulations. Monthly Weather Review, 1984, 112, 340-356.	0.5	103
23	Turbulence statistics of a Kelvinâ€"Helmholtz billow event observed in the night-time boundary layer during the Cooperative Atmosphereâ€"Surface Exchange Study field program. Dynamics of Atmospheres and Oceans, 2001, 34, 189-204.	0.7	102
24	The Very Stable Boundary Layer on Nights with Weak Low-Level Jets. Journals of the Atmospheric Sciences, 2007, 64, 3068-3090.	0.6	97
25	Stable-boundary-layer regimes from the perspective of the low-level jet. Acta Geophysica, 2008, 56, 58-87.	1.0	97
26	Doppler Lidarâ€"Based Wind-Profile Measurement System for Offshore Wind-Energy and Other Marine Boundary Layer Applications. Journal of Applied Meteorology and Climatology, 2012, 51, 327-349.	0.6	96
27	Overview of the 2010 Carbonaceous Aerosols and Radiative Effects Study (CARES). Atmospheric Chemistry and Physics, 2012, 12, 7647-7687.	1.9	94
28	Improving Wind Energy Forecasting through Numerical Weather Prediction Model Development. Bulletin of the American Meteorological Society, 2019, 100, 2201-2220.	1.7	87
29	Boundary-layer anemometry by optical remote sensing for wind energy applications. Meteorologische Zeitschrift, 2007, 16, 337-347.	0.5	85
30	Thunderstorm Genesis Zones in the Colorado Rocky Mountains as Determined by Traceback of Geosynchronous Satellite Images. Monthly Weather Review, 1987, 115, 463-476.	0.5	84
31	Wind Energy Meteorology: Insight into Wind Properties in the Turbine-Rotor Layer of the Atmosphere from High-Resolution Doppler Lidar. Bulletin of the American Meteorological Society, 2013, 94, 883-902.	1.7	79
32	Elevated ozone layers and vertical down-mixing over the Lower Fraser Valley, BC. Atmospheric Environment, 1997, 31, 2135-2146.	1.9	78
33	Characterization of the Nashville urban plume on July 3 and July 18, 1995. Journal of Geophysical Research, 1998, 103, 28129-28148.	3.3	78
34	An Analysis of the Structure of Local Wind Systems in a Broad Mountain Basin. Journal of Applied Meteorology, 1981, 20, 1255-1266.	1.1	77
35	Nocturnal cleansing flows in a tributary valley. Atmospheric Environment, 1997, 31, 2147-2162.	1.9	77
36	A New Research Approach for Observing and Characterizing Landâ€"Atmosphere Feedback. Bulletin of the American Meteorological Society, 2018, 99, 1639-1667.	1.7	75

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37	Nocturnal Low-Level Jet in a Mountain Basin Complex. Part I: Evolution and Effects on Local Flows. Journal of Applied Meteorology and Climatology, 2004, 43, 1348-1365.	1.7	71
38	Lidar Investigation of Atmosphere Effect on a Wind Turbine Wake. Journal of Atmospheric and Oceanic Technology, 2013, 30, 2554-2570.	0.5	71
39	Longâ€range transport of ozone from the Los Angeles Basin: A case study. Geophysical Research Letters, 2010, 37, .	1.5	70
40	Urban-rural contrasts in mixing height and cloudiness over Nashville in 1999. Journal of Geophysical Research, 2003, 108, n/a-n/a.	3.3	65
41	Development and Application of a Compact, Tunable, Solid-State Airborne Ozone Lidar System for Boundary Layer Profiling. Journal of Atmospheric and Oceanic Technology, 2011, 28, 1258-1272.	0.5	64
42	Numerical and Experimental Investigation of the Neutral Atmospheric Surface Layer. Journals of the Atmospheric Sciences, 2007, 64, 137-156.	0.6	62
43	Dependence of daily peak O3 concentrations near Houston, Texas on environmental factors: Wind speed, temperature, and boundary-layer depth. Atmospheric Environment, 2011, 45, 162-173.	1.9	60
44	Two- and Three-Dimensional Simulations of the 9 January 1989 Severe Boulder Windstorm: Comparison with Observations. Journals of the Atmospheric Sciences, 1994, 51, 2317-2343.	0.6	57
45	Gap flow in an Alpine valley during a shallow south foÂ¨hn event: Observations, numerical simulations and hydraulic analogue. Quarterly Journal of the Royal Meteorological Society, 2002, 128, 1173-1210.	1.0	56
46	The Second Wind Forecast Improvement Project (WFIP2): Observational Field Campaign. Bulletin of the American Meteorological Society, 2019, 100, 1701-1723.	1.7	55
47	Sea Breezes Shallow and Deep on the California Coast. Monthly Weather Review, 1995, 123, 3614-3622.	0.5	54
48	Evaluation of turbulence measurement techniques from a single Doppler lidar. Atmospheric Measurement Techniques, 2017, 10, 3021-3039.	1.2	49
49	Comparisons between Mesoscale Model Terrain Sensitivity Studies and Doppler Lidar Measurements of the Sea Breeze at Monterey Bay. Monthly Weather Review, 2002, 130, 2813-2838.	0.5	48
50	Horizontal-Velocity and Variance Measurements in the Stable Boundary Layer Using Doppler Lidar: Sensitivity to Averaging Procedures. Journal of Atmospheric and Oceanic Technology, 2008, 25, 1307-1327.	0.5	48
51	A new formulation for rotor equivalent wind speed for wind resource assessment and wind power forecasting. Wind Energy, 2016, 19, 1439-1452.	1.9	47
52	Implications of Small-Scale Flow Features to Modeling Dispersion over Complex Terrain. Journal of Applied Meteorology and Climatology, 1996, 35, 330-342.	1.7	46
53	Daytime Boundary Layer Evolution over Mountainous Terrain. Part II: Numerical Studies of Upslope Flow Duration. Monthly Weather Review, 1986, 114, 1112-1130.	0.5	45
54	A Comparison of Mixing Depths Observed by Ground-Based Wind Profilers and an Airborne Lidar. Journal of Atmospheric and Oceanic Technology, 1999, 16, 584-590.	0.5	45

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55	3D Volumetric Analysis of Wind Turbine Wake Properties in the Atmosphere Using High-Resolution Doppler Lidar. Journal of Atmospheric and Oceanic Technology, 2015, 32, 904-914.	0.5	45
56	Comparing the impact of meteorological variability on surface ozone during the NEAQS (2002) and ICARTT (2004) field campaigns. Journal of Geophysical Research, 2007, 112, .	3.3	43
57	Wind-Flow Patterns in the Grand Canyon as Revealed by Doppler Lidar. Journal of Applied Meteorology and Climatology, 1999, 38, 1069-1083.	1.7	42
58	Ozone production during an urban air stagnation episode over Nashville, Tennessee. Journal of Geophysical Research, 1998, 103, 22555-22568.	3.3	41
59	Ozone differences between nearâ€coastal and offshore sites in New England: Role of meteorology. Journal of Geophysical Research, 2007, 112, .	3.3	41
60	Nocturnal Low-Level Jet in a Mountain Basin Complex. Part II: Transport and Diffusion of Tracer under Stable Conditions. Journal of Applied Meteorology and Climatology, 2006, 45, 740-753.	0.6	40
61	Stable Boundary Layer Depth from High-Resolution Measurements of the Mean Wind Profile. Journal of Applied Meteorology and Climatology, 2010, 49, 20-35.	0.6	39
62	Relationships of coastal nocturnal boundary layer winds and turbulence to Houston ozone concentrations during TexAQS 2006. Journal of Geophysical Research, 2010, 115, .	3.3	39
63	Influence of canyon-induced flows on flow and dispersion over adjacent plains. Theoretical and Applied Climatology, 1995, 52, 27-42.	1.3	38
64	Meteorological conditions during the 1995 Southern Oxidants Study Nashville/Middle Tennessee Field Intensive. Journal of Geophysical Research, 1998, 103, 22225-22243.	3.3	38
65	Gap flow measurements during the Mesoscale Alpine Programme. Meteorology and Atmospheric Physics, 2004, 86, 99-119.	0.9	36
66	Regional and local background ozone in Houston during Texas Air Quality Study 2006. Journal of Geophysical Research, 2009, 114, .	3.3	35
67	The Multi-center Airborne Coherent Atmospheric Wind Sensor. Bulletin of the American Meteorological Society, 1998, 79, 581-599.	1.7	34
68	Influence of soil moisture on simulations of katabatic flow. Theoretical and Applied Climatology, 1995, 52, 85-94.	1.3	30
69	Mixing-height differences between land use types: Dependence on wind speed. Journal of Geophysical Research, 2003, 108, .	3.3	29
70	Properties of the offshore low level jet and rotor layer wind shear as measured by scanning Doppler Lidar. Wind Energy, 2017, 20, 987-1002.	1.9	27
71	Vertical variations in O3concentrations before and after a gust front passage. Journal of Geophysical Research, 2002, 107, ACH 9-1.	3.3	26
72	Spatial Variability of Winds and HRRRâ€“NCEP Model Error Statistics at Three Doppler-Lidar Sites in the Wind-Energy Generation Region of the Columbia River Basin. Journal of Applied Meteorology and Climatology, 2019, 58, 1633-1656.	0.6	25

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73	Observations of the Temporal Evolution and Spatial Structure of the Gap Flow in the Wipp Valley on 2 and 3 October 1999. Monthly Weather Review, 2004, 132, 2684-2697.	0.5	24
74	Airborne lidar measurements of ozone flux downwind of Houston and Dallas. Journal of Geophysical Research, 2010, 115, .	3.3	24
75	Late-Morning Jump in TKE in the Mixed Layer over a Mountain Basin. Journals of the Atmospheric Sciences, 1985, 42, 407-411.	0.6	23
76	Convective venting and surface ozone in Houston during TexAQS 2006. Journal of Geophysical Research, 2010, 115, .	3.3	23
77	Identification and Characterization of Persistent Cold Pool Events from Temperature and Wind Profilers in the Columbia River Basin. Journal of Applied Meteorology and Climatology, 2019, 58, 2533-2551.	0.6	23
78	Along-Valley Structure of Daytime Thermally Driven Flows in the Wipp Valley. Journal of Applied Meteorology and Climatology, 2008, 47, 733-751.	0.6	21
79	Daytime Photochemical Pollutant Transport over a Tributary Valley Lake in Southwestern British Columbia. Journal of Applied Meteorology and Climatology, 1998, 37, 393-404.	1.7	20
80	Assessment of NWP Forecast Models in Simulating Offshore Winds through the Lower Boundary Layer by Measurements from a Ship-Based Scanning Doppler Lidar. Monthly Weather Review, 2017, 145, 4277-4301.	0.5	20
81	Assimilating Coherent Doppler Lidar Measurements into a Model of the Atmospheric Boundary Layer. Part I: Algorithm Development and Sensitivity to Measurement Error. Journal of Atmospheric and Oceanic Technology, 2004, 21, 1328-1345.	0.5	19
82	Evaluating and Improving NWP Forecast Models for the Future: How the Needs of Offshore Wind Energy Can Point the Way. Bulletin of the American Meteorological Society, 2018, 99, 1155-1176.	1.7	19
83	Observations of a Terrain-Forced Mesoscale Vortex and Canyon Drainage Flows along the Front Range of Colorado. Monthly Weather Review, 1995, 123, 2029-2050.	0.5	18
84	Comparison between the TOPAZ Airborne Ozone Lidar and In Situ Measurements during TexAQS 2006. Journal of Atmospheric and Oceanic Technology, 2011, 28, 1243-1257.	0.5	17
85	Multiscale Analysis of a Meso-Î²Frontal Passage in the Complex Terrain of the Colorado Front Range. Monthly Weather Review, 1999, 127, 2062-2082.	0.5	16
86	Remote sensing of multi-level wind fields with high-energy airborne scanning coherent Doppler lidar. Optics Express, 1998, 2, 40.	1.7	14
87	The POWER Experiment: Impact of Assimilation of a Network of Coastal Wind Profiling Radars on Simulating Offshore Winds in and above the Wind Turbine Layer. Weather and Forecasting, 2016, 31, 1071-1091.	0.5	14
88	Coupled Air Quality and Boundary-Layer Meteorology in Western U.S. Basins during Winter: Design and Rationale for a Comprehensive Study. Bulletin of the American Meteorological Society, 2021, 102, E2012-E2033.	1.7	14
89	Regional contrast in morning transitions observed during the 1999 Southern Oxidants Study Nashville/Middle Tennessee Intensive. Journal of Geophysical Research, 2002, 107, ACL 21-1-ACL 21-12.	3.3	13
90	Observational Techniques: Sampling the Mountain Atmosphere. Springer Atmospheric Sciences, 2013, , 409-530.	0.4	13

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91	Evolution and structure of a cold front in an Alpine valley as revealed by a Doppler lidar. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 962-977.	1.0	12
92	Synoptic variability related to boundary layer and surface features observed during Pacific '93. Atmospheric Environment, 1997, 31, 2163-2173.	1.9	11
93	A comparison of ground-based Doppler lidar and airborne <I>in situ</I> wind observations above complex terrain. Quarterly Journal of the Royal Meteorological Society, 2003, 129, 693-713.	1.0	11
94	Characterizing NWP Model Errors Using Doppler-Lidar Measurements of Recurrent Regional Diurnal Flows: Marine-Air Intrusions into the Columbia River Basin. Monthly Weather Review, 2020, 148, 929-953.	0.5	11
95	Evaluating the WFIP2 updates to the HRRR model using scanning Doppler lidar measurements in the complex terrain of the Columbia River Basin. Journal of Renewable and Sustainable Energy, 2020, 12, .	0.8	8
96	Assimilating Coherent Doppler Lidar Measurements into a Model of the Atmospheric Boundary Layer. Part II: Sensitivity Analyses. Journal of Atmospheric and Oceanic Technology, 2004, 21, 1809-1824.	0.5	7
97	Sensitivity Studies on the Continentality of a Numerically Simulated Cumulonimbus. Journal of Climate and Applied Meteorology, 1987, 26, 275-286.	1.0	6
98	Vertical Wind Velocities from Superpressure Balloons: A Case Study using Eole Data. Monthly Weather Review, 1976, 104, 628-640.	0.5	5
99	Revisiting the Surface Energy Imbalance. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD034219.	1.2	4
100	Spatial and temporal variability of ozone along the Colorado Front Range occurring over 2 days with contrasting wind flow. Elementa, 2021, 9, .	1.1	2
101	Sampling Requirements for Drainage Flows that Transport Atmospheric Contaminants in Complex Terrain. Radiation Protection Dosimetry, 1993, 50, 243-248.	0.4	2
102	Characterization of turbulence under different stability conditions using lidar scanning data. Journal of Physics: Conference Series, 2020, 1452, 012085.	0.3	1
103	Doppler-Lidar Evaluation of HRRR-Model Skill at Simulating Summertime Wind Regimes in the Columbia River Basin during WFIP2. Weather and Forecasting, 2021, , .	0.5	1
104	Enhancing energy production by wind farms. SPIE Newsroom, 2011, , .	0.1	1
105	Equations and approximations involved in computing vertical wind velocities from superpressure balloon data. Archives for Meteorology, Geophysics and Bioclimatology, Series A, 1976, 25, 19-30.	0.4	0
106	Numerical Simulations of the Development of Mountain Cumulus Clouds. Journal of the Meteorological Society of Japan, 1986, 64A, 767-775.	0.7	0
107	Doppler Lidar in the Wind Forecast Improvement Projects. EPJ Web of Conferences, 2016, 119, 10001.	0.1	0