N P Molotch

List of Publications by Year
in descending order

92 papers	5,999 citations	61984 43 h-index	74163 75 g-index
94 all docs	94 docs citations	94 times ranked	4909 citing authors

#	Article	IF	Citations
1	Mountain hydrology of the western United States. Water Resources Research, 2006, 42, .	4.2	521
2	Extreme snowfall events linked to atmospheric rivers and surface air temperature via satellite measurements. Geophysical Research Letters, 2010, 37, .	4.0	254
3	Spatial variation of the rainâ€"snow temperature threshold across the Northern Hemisphere. Nature Communications, 2018, 9, 1148.	12.8	210
4	Snowmelt rate dictates streamflow. Geophysical Research Letters, 2016, 43, 8006-8016.	4.0	206
5	GRACE Groundwater Drought Index: Evaluation of California Central Valley groundwater drought. Remote Sensing of Environment, 2017, 198, 384-392.	11.0	196
6	Elevation-dependent influence of snow accumulation on forest greening. Nature Geoscience, 2012, 5, 705-709.	12.9	187
7	Contact spectroscopy for determination of stratigraphy of snow optical grain size. Journal of Glaciology, 2007, 53, 121-127.	2.2	166
8	Estimating the spatial distribution of snow water equivalent in an alpine basin using binary regression tree models: the impact of digital elevation data and independent variable selection. Hydrological Processes, 2005, 19, 1459-1479.	2.6	163
9	Scaling snow observations from the point to the grid element: Implications for observation network design. Water Resources Research, 2005, 41, .	4.2	157
10	Effects of vegetation on snow accumulation and ablation in a midâ€latitude subâ€alpine forest. Hydrological Processes, 2008, 22, 2767-2776.	2.6	153
11	Ecohydrological controls on snowmelt partitioning in mixedâ€conifer subâ€alpine forests. Ecohydrology, 2009, 2, 129-142.	2.4	137
12	Does the Maddenâ€"Julian Oscillation Influence Wintertime Atmospheric Rivers and Snowpack in the Sierra Nevada?. Monthly Weather Review, 2012, 140, 325-342.	1.4	134
13	The 2010/2011 snow season in California's Sierra Nevada: Role of atmospheric rivers and modes of large-scale variability. Water Resources Research, 2013, 49, 6731-6743.	4.2	134
14	Quantifying the effects of vegetation structure on snow accumulation and ablation in mixedâ€conifer forests. Ecohydrology, 2015, 8, 1073-1094.	2.4	124
15	Estimating the distribution of snow water equivalent using remotely sensed snow cover data and a spatially distributed snowmelt model: A multi-resolution, multi-sensor comparison. Advances in Water Resources, 2008, 31, 1503-1514.	3.8	123
16	Estimating sublimation of intercepted and sub-canopy snow using eddy covariance systems. Hydrological Processes, 2007, 21, 1567-1575.	2.6	114
17	Snowpack regimes of the Western United States. Water Resources Research, 2014, 50, 5611-5623.	4.2	111
18	Winter melt trends portend widespread declines in snow water resources. Nature Climate Change, 2021, 11, 418-424.	18.8	110

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19	â€˜Quantifying the effects of forest canopy cover on net snow accumulation at a continental, midâ€latitude siteâ€™. Ecohydrology, 2009, 2, 115-128.	2.4	104
20	Algae Drive Enhanced Darkening of Bare Ice on the Greenland Ice Sheet. Geophysical Research Letters, 2017, 44, 11,463.	4.0	101
21	Subgrid variability of snow water equivalent at operational snow stations in the western USA. Hydrological Processes, 2013, 27, 2383-2400.	2.6	99
22	Soil moisture response to snowmelt timing in mixedâ€conifer subalpine forests. Hydrological Processes, 2015, 29, 2782-2798.	2.6	92
23	Snow water equivalent in the Sierra Nevada: Blending snow sensor observations with snowmelt model simulations. Water Resources Research, 2013, 49, 5029-5046.	4.2	90
24	SNOTEL representativeness in the Rio Grande headwaters on the basis of physiographics and remotely sensed snow cover persistence. Hydrological Processes, 2006, 20, 723-739.	2.6	83
25	Testing aboveâ€and belowâ€canopy representations of turbulent fluxes in an energy balance snowmelt model. Water Resources Research, 2013, 49, 1107-1122.	4.2	82
26	Estimating snow sublimation using natural chemical and isotopic tracers across a gradient of solar radiation. Water Resources Research, 2010, 46, .	4.2	79
27	LiDAR measurement of seasonal snow accumulation along an elevation gradient in the southern Sierra Nevada, California. Hydrology and Earth System Sciences, 2014, 18, 4261-4275.	4.9	79
28	Sensitivity of soil water availability to changing snowmelt timing in the western U.S.. Geophysical Research Letters, 2015, 42, 8011-8020.	4.0	78
29	Reconstructing snow water equivalent in the Rio Grande headwaters using remotely sensed snow cover data and a spatially distributed snowmelt model. Hydrological Processes, 2009, 23, 1076-1089.	2.6	76
30	LiDARâ€derived snowpack data sets from mixed conifer forests across the Western United States. Water Resources Research, 2014, 50, 2749-2755.	4.2	75
31	Influence of canopy structure and direct beam solar irradiance on snowmelt rates in a mixed conifer forest. Agricultural and Forest Meteorology, 2012, 161, 46-56.	4.8	74
32	Estimation of solar direct beam transmittance of conifer canopies from airborne LiDAR. Remote Sensing of Environment, 2013, 136, 402-415.	11.0	70
33	Interannual variability of snowmelt in the Sierra Nevada and Rocky Mountains, United States: Examples from two alpine watersheds. Water Resources Research, 2012, 48, .	4.2	63
34	Merging complementary remote sensing datasets in the context of snow water equivalent reconstruction. Remote Sensing of Environment, 2008, 112, 1212-1225.	11.0	60
35	Catchment response to bark beetle outbreak and dust-on-snow in the Colorado Rocky Mountains. Journal of Hydrology, 2015, 523, 196-210.	5.4	58
36	The Role of Frozen Soil in Groundwater Discharge Predictions for Warming Alpine Watersheds. Water Resources Research, 2018, 54, 1599-1615.	4.2	57

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37	Estimating the distribution of snow water equivalent and snow extent beneath cloud cover in the Saltâ€“Verde River basin, Arizona. Hydrological Processes, 2004, 18, 1595-1611.	2.6	56
38	A Bayesian approach to snow water equivalent reconstruction. Journal of Geophysical Research, 2008, 113, .	3.3	56
39	The effect of spatial variability on the sensitivity of passive microwave measurements to snow water equivalent. Remote Sensing of Environment, 2013, 136, 163-179.	11.0	56
40	A Vision for Future Observations for Western U.S. Extreme Precipitation and Flooding. Journal of Contemporary Water Research and Education, 2014, 153, 16-32.	0.7	52
41	Earlier snowmelt reduces atmospheric carbon uptake in midlatitude subalpine forests. Geophysical Research Letters, 2016, 43, 8160-8168.	4.0	48
42	Case study of spatial and temporal variability of snow cover, grain size, albedo and radiative forcing in the Sierra Nevada and Rocky Mountain snowpack derived from imaging spectroscopy. Cryosphere, 2016, 10, 1229-1244.	3.9	47
43	Spatio-temporal variability of snow water equivalent in the extra-tropical Andes Cordillera from distributed energy balance modeling and remotely sensed snow cover. Hydrology and Earth System Sciences, 2016, 20, 411-430.	4.9	47
44	Summer and winter drought drive the initiation and spread of spruce beetle outbreak. Ecology, 2017, 98, 2698-2707.	3.2	47
45	Energy budget increases reduce mean streamflow more than snowâ€“rain transitions: using integrated modeling to isolate climate change impacts on Rocky Mountain hydrology. Environmental Research Letters, 2016, 11, 044015.	5.2	44
46	Sources of streamflow along a headwater catchment elevational gradient. Journal of Hydrology, 2017, 549, 163-178.	5.4	44
47	Filling in the gaps: Inferring spatially distributed precipitation from gauge observations over complex terrain. Water Resources Research, 2014, 50, 8589-8610.	4.2	40
48	Snow Temperature Changes within a Seasonal Snowpack and Their Relationship to Turbulent Fluxes of Sensible and Latent Heat. Journal of Hydrometeorology, 2014, 15, 117-142.	1.9	38
49	Realâ€time estimation of snow water equivalent in the <scp>U</scp> pper <scp>C</scp> olorado <scp>R</scp> iver <scp>B</scp> asin using <scp>MODIS</scp> â€based <scp>SWE</scp> Reconstructions and <scp>SNOTEL</scp> data. Water Resources Research, 2016, 52, 7892-7910.	4.2	38
50	Extreme Runoff Generation From Atmospheric River Driven Snowmelt During the 2017 Oroville Dam Spillways Incident. Geophysical Research Letters, 2020, 47, e2020GL088189.	4.0	38
51	A First-Order Characterization of Errors From Neglecting Stratigraphy in Forward and Inverse Passive Microwave Modeling of Snow. IEEE Geoscience and Remote Sensing Letters, 2011, 8, 730-734.	3.1	37
52	Laser vision: lidar as a transformative tool to advance critical zone science. Hydrology and Earth System Sciences, 2015, 19, 2881-2897.	4.9	37
53	Spatially Extensive Groundâ€Penetrating Radar Snow Depth Observations During NASA's 2017 SnowEx Campaign: Comparison With In Situ, Airborne, and Satellite Observations. Water Resources Research, 2019, 55, 10026-10036.	4.2	37
54	Improved snowmelt simulations with a canopy model forced with photoâ€derived direct beam canopy transmissivity. Water Resources Research, 2012, 48, .	4.2	35

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55	Observations and simulations of the seasonal evolution of snowpack cold content and its relation to snowmelt and the snowpack energy budget. Cryosphere, 2018, 12, 1595-1614.	3.9	33
56	Snowmeltâ€Driven Tradeâ€Offs Between Early and Late Season Productivity Negatively Impact Forest Carbon Uptake During Drought. Geophysical Research Letters, 2018, 45, 3087-3096.	4.0	31
57	Topographic heterogeneity explains patterns of vegetation response to climate change (1972â€“2008) across a mountain landscape, Niwot Ridge, Colorado. Arctic, Antarctic, and Alpine Research, 2018, 50, .	1.1	31
58	Signatures of Hydrologic Function Across the Critical Zone Observatory Network. Water Resources Research, 2021, 57, e2019WR026635.	4.2	31
59	Snowmelt response to simulated warming across a large elevation gradient, southern Sierra Nevada, California. Cryosphere, 2017, 11, 2847-2866.	3.9	29
60	The sensitivity of modeled snow accumulation and melt to precipitation phase methods across a climatic gradient. Hydrology and Earth System Sciences, 2019, 23, 3765-3786.	4.9	29
61	The â€˜teflon basinâ€™ myth: hydrology and hydrochemistry of a seasonally snow-covered catchment. Plant Ecology and Diversity, 2015, 8, 639-661.	2.4	28
62	Physiographic and climatic controls on snow cover persistence in the Sierra Nevada Mountains. Hydrological Processes, 2014, 28, 4573-4586.	2.6	25
63	The Counteracting Effects of Snowmelt Rate and Timing on Runoff. Water Resources Research, 2020, 56, e2019WR026634.	4.2	23
64	Monitoring the timing of snowmelt and the initiation of streamflow using a distributed network of temperature/light sensors. Ecohydrology, 2008, 1, 215-224.	2.4	22
65	Spatial snow water equivalent estimation for mountainous areas using wireless-sensor networks and remote-sensing products. Remote Sensing of Environment, 2018, 215, 44-56.	11.0	22
66	On the use of a snow aridity index to predict remotely sensed forest productivity in the presence of bark beetle disturbance. Water Resources Research, 2017, 53, 4891-4906.	4.2	19
67	Combining Groundâ€Penetrating Radar With Terrestrial LiDAR Scanning to Estimate the Spatial Distribution of Liquid Water Content in Seasonal Snowpacks. Water Resources Research, 2018, 54, 10,339.	4.2	19
68	Modelling the effects of the mountain pine beetle on snowmelt in a subalpine forest. Ecohydrology, 2014, 7, 226-241.	2.4	18
69	Snowpack-climate manipulation using infrared heaters in subalpine forests of the Southern Rocky Mountains, USA. Agricultural and Forest Meteorology, 2015, 203, 142-157.	4.8	17
70	Hydrologic connectivity at the hillslope scale through intraâ€snowpack flow paths during snowmelt. Hydrological Processes, 2020, 34, 1616-1629.	2.6	17
71	Measuring spatiotemporal variation in snow optical grain size under a subalpine forest canopy using contact spectroscopy. Water Resources Research, 2016, 52, 7513-7522.	4.2	16
72	Estimating stream chemistry during the snowmelt pulse using a spatially distributed, coupled snowmelt and hydrochemical modeling approach. Water Resources Research, 2008, 44, .	4.2	15

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73	Snowfall interception in a deciduous <scp>Nothofagus</scp> forest and implications for spatial snowpack distribution. Hydrological Processes, 2019, 33, 1818-1834.	2.6	15
74	Snowfall Fraction, Cold Content, and Energy Balance Changes Drive Differential Response to Simulated Warming in an Alpine and Subalpine Snowpack. Frontiers in Earth Science, 2020, 8, .	1.8	15
75	On the characterization of vegetation transmissivity using LAI for application in passive microwave remote sensing of snowpack. Remote Sensing of Environment, 2015, 156, 310-321.	11.0	13
76	Combining ground-based and remotely sensed snow data in a linear regression model for real-time estimation of snow water equivalent. Advances in Water Resources, 2022, 160, 104075.	3.8	13
77	Relationships between stream nitrate concentration and spatially distributed snowmelt in highâ€elevation catchments of the western U.S.. Water Resources Research, 2014, 50, 8694-8713.	4.2	12
78	Quantifying insect-related forest mortality with the remote sensing of snow. Remote Sensing of Environment, 2017, 188, 26-36.	11.0	12
79	Withinâ€Stand Boundary Effects on Snow Water Equivalent Distribution in Forested Areas. Water Resources Research, 2020, 56, e2019WR024905.	4.2	12
80	Portable spectral profiler probe for rapid snow grain size stratigraphy. Cold Regions Science and Technology, 2013, 85, 183-190.	3.5	11
81	From Patch to Catchment: A Statistical Framework to Identify and Map Soil Moisture Patterns Across Complex Alpine Terrain. Frontiers in Water, 2020, 2, .	2.3	10
82	Response to comment by A.G. Slater, M.P. Clark, and A.P. Barrett on â€˜Estimating the distribution of snow water equivalent using remotely sensed snow cover data and a spatially distributed snowmelt model: A multi-resolution, multi-sensor comparisonâ€™ [[Adv. Water Resour. 31 (2008) 1503â€“1514]. Adv Water Resour 2009;32(11):1680â€“4]. Advances in Water Resources, 2010, 33, 231-239.	3.8	8
83	The sensitivity of runoff generation to spatial snowpack uniformity in an alpine watershed: Green Lakes Valley, Niwot Ridge Longâ€Term Ecological Research station. Hydrological Processes, 2021, 35, e14331.	2.6	7
84	Future land cover and climate may drive decreases in snow windâ€scour and transpiration, increasing streamflow at a Colorado, USA headwater catchment. Hydrological Processes, 2021, 35, e14416.	2.6	5
85	Evaluation of stereology for snow microstructure measurement and microwave emission modeling: a case study. International Journal of Digital Earth, 2021, 14, 1316-1336.	3.9	4
86	Investigating the Relationship Between Peak Snowâ€Water Equivalent and Snow Timing Indices in the Western United States and Alaska. Water Resources Research, 2021, 57, e2020WR029395.	4.2	4
87	Longâ€term ecological research and the <scp>COVID</scp>â€19 anthropause: A window to understanding socialâ€“ecological disturbance. Ecosphere, 2022, 13, e4019.	2.2	4
88	Potential of Balloon Photogrammetry for Spatially Continuous Snow Depth Measurements. IEEE Geoscience and Remote Sensing Letters, 2020, 17, 1667-1671.	3.1	3
89	Catchmentâ€scale observations at the Niwot Ridge <scp>longâ€term</scp> ecological research site. Hydrological Processes, 2021, 35, e14320.	2.6	3
90	Event-Response Ellipses: A Method to Quantify and Compare the Role of Dynamic Storage at the Catchment Scale in Snowmelt-Dominated Systems. Water (Switzerland), 2018, 10, 1824.	2.7	1

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91	Extending the vadose zone: Characterizing the role of snow for liquid water storage and transmission in streamflow generation. Hydrological Processes, 2022, 36, .	2.6	1
92	Monitoring a snowpackâ€™s ability to store liquid water at the small catchment scale. , 2020, , .		0