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	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
2	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
3	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
4	Signatures of Hydrologic Function Across the Critical Zone Observatory Network. Water Resources Research, 2021, 57, e2019WR026635.	4.2	31
5	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
6	Winter melt trends portend widespread declines in snow water resources. Nature Climate Change, 2021, 11, 418-424.	18.8	110
7	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
8	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
9	Catchmentâ€scale observations at the Niwot Ridge <scp>longâ€term</scp> ecological research site. Hydrological Processes, 2021, 35, e14320.	2.6	3
10	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
11	Withinâ€Stand Boundary Effects on Snow Water Equivalent Distribution in Forested Areas. Water Resources Research, 2020, 56, e2019WR024905.	4.2	12
12	The Counteracting Effects of Snowmelt Rate and Timing on Runoff. Water Resources Research, 2020, 56, e2019WR026634.	4.2	23
13	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
14	Hydrologic connectivity at the hillslope scale through intraâ€snowpack flow paths during snowmelt. Hydrological Processes, 2020, 34, 1616-1629.	2.6	17
15	Potential of Balloon Photogrammetry for Spatially Continuous Snow Depth Measurements. IEEE Geoscience and Remote Sensing Letters, 2020, 17, 1667-1671.	3.1	3
16	Extreme Runoff Generation From Atmospheric River Driven Snowmelt During the 2017 Oroville Dam Spillways Incident. Geophysical Research Letters, 2020, 47, e2020GL088189.	4.0	38
17	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
18	Monitoring a snowpackâ€™s ability to store liquid water at the small catchment scale. , 2020, , .		0

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19	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
20	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
21	Snowfall interception in a deciduous <scp>Nothofagus</scp> forest and implications for spatial snowpack distribution. Hydrological Processes, 2019, 33, 1818-1834.	2.6	15
22	The Role of Frozen Soil in Groundwater Discharge Predictions for Warming Alpine Watersheds. Water Resources Research, 2018, 54, 1599-1615.	4.2	57
23	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
24	Spatial variation of the rainâ€“snow temperature threshold across the Northern Hemisphere. Nature Communications, 2018, 9, 1148.	12.8	210
25	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
26	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
27	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
28	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
29	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
30	Quantifying insect-related forest mortality with the remote sensing of snow. Remote Sensing of Environment, 2017, 188, 26-36.	11.0	12
31	Sources of streamflow along a headwater catchment elevational gradient. Journal of Hydrology, 2017, 549, 163-178.	5.4	44
32	Summer and winter drought drive the initiation and spread of spruce beetle outbreak. Ecology, 2017, 98, 2698-2707.	3.2	47
33	Algae Drive Enhanced Darkening of Bare Ice on the Greenland Ice Sheet. Geophysical Research Letters, 2017, 44, 11,463.	4.0	101
34	GRACE Groundwater Drought Index: Evaluation of California Central Valley groundwater drought. Remote Sensing of Environment, 2017, 198, 384-392.	11.0	196
35	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
36	Snowmelt response to simulated warming across a large elevation gradient, southern Sierra Nevada, California. Cryosphere, 2017, 11, 2847-2866.	3.9	29

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37	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
38	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
39	Earlier snowmelt reduces atmospheric carbon uptake in midlatitude subalpine forests. Geophysical Research Letters, 2016, 43, 8160-8168.	4.0	48
40	Snowmelt rate dictates streamflow. Geophysical Research Letters, 2016, 43, 8006-8016.	4.0	206
41	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
42	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
43	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
44	Sensitivity of soil water availability to changing snowmelt timing in the western U.S.. Geophysical Research Letters, 2015, 42, 8011-8020.	4.0	78
45	Soil moisture response to snowmelt timing in mixedâ€conifer subalpine forests. Hydrological Processes, 2015, 29, 2782-2798.	2.6	92
46	Quantifying the effects of vegetation structure on snow accumulation and ablation in mixedâ€conifer forests. Ecohydrology, 2015, 8, 1073-1094.	2.4	124
47	Laser vision: lidar as a transformative tool to advance critical zone science. Hydrology and Earth System Sciences, 2015, 19, 2881-2897.	4.9	37
48	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
49	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
50	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
51	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
52	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
53	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
54	Modelling the effects of the mountain pine beetle on snowmelt in a subalpine forest. Ecohydrology, 2014, 7, 226-241.	2.4	18

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55	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
56	LiDARâ€derived snowpack data sets from mixed conifer forests across the Western United States. Water Resources Research, 2014, 50, 2749-2755.	4.2	75
57	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
58	Filling in the gaps: Inferring spatially distributed precipitation from gauge observations over complex terrain. Water Resources Research, 2014, 50, 8589-8610.	4.2	40
59	Snowpack regimes of the Western United States. Water Resources Research, 2014, 50, 5611-5623.	4.2	111
60	Physiographic and climatic controls on snow cover persistence in the Sierra Nevada Mountains. Hydrological Processes, 2014, 28, 4573-4586.	2.6	25
61	Subgrid variability of snow water equivalent at operational snow stations in the western USA. Hydrological Processes, 2013, 27, 2383-2400.	2.6	99
62	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
63	Estimation of solar direct beam transmittance of conifer canopies from airborne LiDAR. Remote Sensing of Environment, 2013, 136, 402-415.	11.0	70
64	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
65	Portable spectral profiler probe for rapid snow grain size stratigraphy. Cold Regions Science and Technology, 2013, 85, 183-190.	3.5	11
66	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
67	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
68	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
69	Elevation-dependent influence of snow accumulation on forest greening. Nature Geoscience, 2012, 5, 705-709.	12.9	187
70	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
71	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
72	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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73	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
74	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
75	Estimating snow sublimation using natural chemical and isotopic tracers across a gradient of solar radiation. Water Resources Research, 2010, 46, .	4.2	79
76	Extreme snowfall events linked to atmospheric rivers and surface air temperature via satellite measurements. Geophysical Research Letters, 2010, 37, .	4.0	254
77	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
78	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
79	Ecohydrological controls on snowmelt partitioning in mixedâ€conifer subâ€alpine forests. Ecohydrology, 2009, 2, 129-142.	2.4	137
80	Effects of vegetation on snow accumulation and ablation in a midâ€latitude subâ€alpine forest. Hydrological Processes, 2008, 22, 2767-2776.	2.6	153
81	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
82	Merging complementary remote sensing datasets in the context of snow water equivalent reconstruction. Remote Sensing of Environment, 2008, 112, 1212-1225.	11.0	60
83	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
84	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
85	A Bayesian approach to snow water equivalent reconstruction. Journal of Geophysical Research, 2008, 113, .	3.3	56
86	Contact spectroscopy for determination of stratigraphy of snow optical grain size. Journal of Glaciology, 2007, 53, 121-127.	2.2	166
87	Estimating sublimation of intercepted and sub-canopy snow using eddy covariance systems. Hydrological Processes, 2007, 21, 1567-1575.	2.6	114
88	Mountain hydrology of the western United States. Water Resources Research, 2006, 42, .	4.2	521
89	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
90	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

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91	Scaling snow observations from the point to the grid element: Implications for observation network design. Water Resources Research, 2005, 41, .	4.2	157
92	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