

Laurence C Smith

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

133
papers

9,110
citations

51
h-index

94
g-index

148
ext. papers

10,253
ext. citations

7
avg, IF

6.49
L-index

#	Paper	IF	Citations
133	Disappearing Arctic lakes. <i>Science</i> , 2005 , 308, 1429	33.3	717
132	Satellite remote sensing of river inundation area, stage, and discharge: a review. <i>Hydrological Processes</i> , 1997 , 11, 1427-1439	3.3	521
131	New Trans-Arctic shipping routes navigable by midcentury. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, E1191-5	11.5	377
130	Siberian peatlands a net carbon sink and global methane source since the early Holocene. <i>Science</i> , 2004 , 303, 353-6	33.3	337
129	Climatic and anthropogenic factors affecting river discharge to the global ocean, 1951-2000. <i>Global and Planetary Change</i> , 2008 , 62, 187-194	4.2	320
128	Rapid early development of circumarctic peatlands and atmospheric CH ₄ and CO ₂ variations. <i>Science</i> , 2006 , 314, 285-8	33.3	291
127	Methane bubbling from northern lakes: present and future contributions to the global methane budget. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2007 , 365, 1657-76	3	265
126	Amplified carbon release from vast West Siberian peatlands by 2100. <i>Geophysical Research Letters</i> , 2005 , 32,	4.9	235
125	Interferometric radar measurements of water level changes on the Amazon flood plain. <i>Nature</i> , 2000 , 404, 174-7	50.4	235
124	Toward global mapping of river discharge using satellite images and at-many-stations hydraulic geometry. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, 4788-91	11.5	220
123	Stream flow characterization and feature detection using a discrete wavelet transform. <i>Hydrological Processes</i> , 1998 , 12, 233-249	3.3	216
122	Estimating discharge in rivers using remotely sensed hydraulic information. <i>Journal of Hydrology</i> , 2005 , 309, 191-209	6	203
121	Estimation of Discharge From Three Braided Rivers Using Synthetic Aperture Radar Satellite Imagery: Potential Application to Ungaged Basins. <i>Water Resources Research</i> , 1996 , 32, 2021-2034	5.4	198
120	Estimation of river discharge, propagation speed, and hydraulic geometry from space: Lena River, Siberia. <i>Water Resources Research</i> , 2008 , 44,	5.4	155
119	A high-resolution GIS-based inventory of the west Siberian peat carbon pool. <i>Global Biogeochemical Cycles</i> , 2004 , 18, n/a-n/a	5.9	146
118	Divergent long-term trajectories of human access to the Arctic. <i>Nature Climate Change</i> , 2011 , 1, 156-160	21.4	144
117	. <i>IEEE Geoscience and Remote Sensing Letters</i> , 2008 , 5, 70-73	4.1	140

116	Rising minimum daily flows in northern Eurasian rivers: A growing influence of groundwater in the high-latitude hydrologic cycle. <i>Journal of Geophysical Research</i> , 2007 , 112, n/a-n/a		135
115	A first pan-Arctic assessment of the influence of glaciation, permafrost, topography and peatlands on northern hemisphere lake distribution. <i>Permafrost and Periglacial Processes</i> , 2007 , 18, 201-208	4.2	134
114	An intercomparison of remote sensing river discharge estimation algorithms from measurements of river height, width, and slope. <i>Water Resources Research</i> , 2016 , 52, 4527-4549	5.4	131
113	Geochemistry of west Siberian streams and their potential response to permafrost degradation. <i>Water Resources Research</i> , 2007 , 43,	5.4	123
112	Efficient meltwater drainage through supraglacial streams and rivers on the southwest Greenland ice sheet. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 1001-6	11.5	122
111	A new data set for estimating organic carbon storage to 3 m depth in soils of the northern circumpolar permafrost region. <i>Earth System Science Data</i> , 2013 , 5, 393-402	10.5	111
110	Estimating reach-averaged discharge for the River Severn from measurements of river water surface elevation and slope. <i>Journal of Hydrology</i> , 2014 , 511, 92-104	6	110
109	Amazon floodplain water level changes measured with interferometric SIR-C radar. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2001 , 39, 423-431	8.1	108
108	Tracking Dynamic Northern Surface Water Changes with High-Frequency Planet CubeSat Imagery. <i>Remote Sensing</i> , 2017 , 9, 1306	5	107
107	Projected 21st-century changes to Arctic marine access. <i>Climatic Change</i> , 2013 , 118, 885-899	4.5	105
106	A spatially calibrated model of annual accumulation rate on the Greenland Ice Sheet (1958-2007). <i>Journal of Geophysical Research</i> , 2010 , 115,		103
105	Retrieval of river discharge solely from satellite imagery and at-many-stations hydraulic geometry: Sensitivity to river form and optimization parameters. <i>Water Resources Research</i> , 2014 , 50, 9604-9619	5.4	102
104	How well do we know northern land cover? Comparison of four global vegetation and wetland products with a new ground-truth database for West Siberia. <i>Global Biogeochemical Cycles</i> , 2007 , 21,	5.9	99
103	Carbon accumulation in peatlands of West Siberia over the last 2000 years. <i>Global Biogeochemical Cycles</i> , 2009 , 23, n/a-n/a	5.9	97
102	Impacts of climate warming and permafrost thaw on the riverine transport of nitrogen and phosphorus to the Kara Sea. <i>Journal of Geophysical Research</i> , 2007 , 112, n/a-n/a		93
101	Remote sensing of suspended sediment concentration, flow velocity, and lake recharge in the Peace-Athabasca Delta, Canada. <i>Water Resources Research</i> , 2009 , 45,	5.4	90
100	Estimation of Discharge From Braided Glacial Rivers Using ERS 1 Synthetic Aperture Radar: First Results. <i>Water Resources Research</i> , 1995 , 31, 1325-1329	5.4	85
99	Emerging Applications of Interferometric Synthetic Aperture Radar (InSAR) in Geomorphology and Hydrology. <i>Annals of the American Association of Geographers</i> , 2002 , 92, 385-398		82

98	Marine accessibility along Russia's Northern Sea Route. <i>Polar Geography</i> , 2014 , 37, 111-133	2.2	79
97	TRENDS IN RUSSIAN ARCTIC RIVER-ICE FORMATION AND BREAKUP, 1917 TO 1994. <i>Physical Geography</i> , 2000 , 21, 46-56	1.8	79
96	Supraglacial Streams on the Greenland Ice Sheet Delineated From Combined Spectral Shape Information in High-Resolution Satellite Imagery. <i>IEEE Geoscience and Remote Sensing Letters</i> , 2013 , 10, 801-805	4.1	73
95	Temporal and spatial variations in maximum river discharge from a new Russian data set. <i>Journal of Geophysical Research</i> , 2007 , 112, n/a-n/a		67
94	Hydrologic drainage of the Greenland Ice Sheet. <i>Hydrological Processes</i> , 2009 , 23, 2004-2011	3.3	64
93	Spatial and temporal patterns in Arctic river ice breakup observed with MODIS and AVHRR time series. <i>Remote Sensing of Environment</i> , 2004 , 93, 328-338	13.2	64
92	Greenland Ice Sheet surface melt amplified by snowline migration and bare ice exposure. <i>Science Advances</i> , 2019 , 5, eaav3738	14.3	57
91	Dark zone of the Greenland Ice Sheet controlled by distributed biologically-active impurities. <i>Nature Communications</i> , 2018 , 9, 1065	17.4	57
90	Estimation of river depth from remotely sensed hydraulic relationships. <i>Water Resources Research</i> , 2013 , 49, 3165-3179	5.4	56
89	Evidence of meltwater retention within the Greenland ice sheet. <i>Cryosphere</i> , 2013 , 7, 1433-1445	5.5	56
88	Arctic-Boreal Lake Dynamics Revealed Using CubeSat Imagery. <i>Geophysical Research Letters</i> , 2019 , 46, 2111-2120	4.9	55
87	Human alteration of global surface water storage variability. <i>Nature</i> , 2021 , 591, 78-81	50.4	55
86	Geomorphic effectiveness, sandur development, and the pattern of landscape response during júlhlauþs: Skeiðrísandur, southeastern Iceland. <i>Geomorphology</i> , 2002 , 44, 95-113	4.3	53
85	Control on sediment and organic carbon delivery to the Arctic Ocean revealed with space-borne synthetic aperture radar: Ob' River, Siberia. <i>Geology</i> , 1998 , 26, 395	5	52
84	Remote sensing of volumetric storage changes in lakes. <i>Earth Surface Processes and Landforms</i> , 2009 , 34, 1353-1358	3.7	51
83	Intercomparison of four global precipitation data sets and their correlation with increased Eurasian river discharge to the Arctic Ocean. <i>Journal of Geophysical Research</i> , 2006 , 111,		51
82	West Siberian Plain as a late glacial desert. <i>Quaternary International</i> , 2011 , 237, 45-53	2	49
81	Sediment plume response to surface melting and supraglacial lake drainages on the Greenland ice sheet. <i>Journal of Glaciology</i> , 2009 , 55, 1072-1082	3.4	49

80	Hydrologic controls on coastal suspended sediment plumes around the Greenland Ice Sheet. <i>Cryosphere</i> , 2012 , 6, 1-19	5.5	46
79	Automated Image Registration for Hydrologic Change Detection in the Lake-Rich Arctic. <i>IEEE Geoscience and Remote Sensing Letters</i> , 2008 , 5, 414-418	4.1	43
78	Estimation of erosion, deposition, and net volumetric change caused by the 1996 Skeiðarársandur júlhláup, Iceland, from Synthetic Aperture Radar Interferometry. <i>Water Resources Research</i> , 2000 , 36, 1583-1594	5.4	43
77	Climate Elasticity of Low Flows in the Maritime Western U.S. Mountains. <i>Water Resources Research</i> , 2018 , 54, 5602-5619	5.4	42
76	Direct measurements of meltwater runoff on the Greenland ice sheet surface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, E10622-E10631	11.5	42
75	Influence of climate model variability on projected Arctic shipping futures. <i>Earth's Future</i> , 2015 , 3, 331-343	4.3	42
74	Understanding Greenland ice sheet hydrology using an integrated multi-scale approach. <i>Environmental Research Letters</i> , 2013 , 8, 015017	6.2	39
73	Recent temperature and precipitation increases in West Siberia and their association with the Arctic Oscillation. <i>Polar Research</i> , 2003 , 22, 287-300	2	39
72	AirSWOT measurements of river water surface elevation and slope: Tanana River, AK. <i>Geophysical Research Letters</i> , 2017 , 44, 181-189	4.9	37
71	Remote sensing of hydrologic recharge in the Peace-Athabasca Delta, Canada. <i>Geophysical Research Letters</i> , 2008 , 35,	4.9	37
70	Melting of small Arctic ice caps observed from ERS scatterometer time series. <i>Geophysical Research Letters</i> , 2003 , 30,	4.9	36
69	Mapping the bathymetry of supraglacial lakes and streams on the Greenland ice sheet using field measurements and high-resolution satellite images. <i>Cryosphere</i> , 2014 , 8, 215-228	5.5	35
68	Recent temperature and precipitation increases in West Siberia and their association with the Arctic Oscillation. <i>Polar Research</i> , 2003 , 22, 287-300	2	34
67	Internally drained catchments dominate supraglacial hydrology of the southwest Greenland Ice Sheet. <i>Journal of Geophysical Research F: Earth Surface</i> , 2016 , 121, 1891-1910	3.8	33
66	Seasonal climatic forcing of alpine glaciers revealed with orbital synthetic aperture radar. <i>Journal of Glaciology</i> , 1997 , 43, 480-488	3.4	33
65	Diffusion modeling of recessional flow on central Amazonian floodplains. <i>Geophysical Research Letters</i> , 2005 , 32,	4.9	33
64	A Caution on the Use of Surface Digital Elevation Models to Simulate Supraglacial Hydrology of the Greenland Ice Sheet. <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i> , 2015 , 8, 5212-5224	4.7	32
63	Hydrological Changes: Historical Analysis, Contemporary Status, and Future Projections. <i>Springer Environmental Science and Engineering</i> , 2013 , 111-154		29

62	Evaluation of satellite remote sensing albedo retrievals over the ablation area of the southwestern Greenland ice sheet. <i>Remote Sensing of Environment</i> , 2017 , 198, 115-125	13.2	28
61	Does sea ice influence Greenland ice sheet surface-melt?. <i>Environmental Research Letters</i> , 2009 , 4, 024016	1.2	27
60	Seasonal climatic forcing of alpine glaciers revealed with orbital synthetic aperture radar. <i>Journal of Glaciology</i> , 1997 , 43, 480-488	3.4	27
59	Geomorphic impact and rapid subsequent recovery from the 1996 Skeiðarándur júlhlauþ, Iceland, measured with multi-year airborne lidar. <i>Geomorphology</i> , 2006 , 75, 65-75	4.3	27
58	Meltwater storage in low-density near-surface bare ice in the Greenland ice sheet ablation zone. <i>Cryosphere</i> , 2018 , 12, 955-970	5.5	26
57	Derivation of High Spatial Resolution Albedo from UAV Digital Imagery: Application over the Greenland Ice Sheet. <i>Frontiers in Earth Science</i> , 2017 , 5,	3.5	25
56	Fluvial morphometry of supraglacial river networks on the southwest Greenland Ice Sheet. <i>GIScience and Remote Sensing</i> , 2016 , 53, 459-482	4.8	24
55	Automated Image Registration Based on Pseudoinvariant Metrics of Dynamic Land-Surface Features. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2008 , 46, 3908-3916	8.1	24
54	Evaluation of remote-sensing techniques to measure decadal-scale changes of Hofsjökull ice cap, Iceland. <i>Journal of Glaciology</i> , 2000 , 46, 375-388	3.4	24
53	Proglacial river stage, discharge, and temperature datasets from the Akuliarusiarsoq Kuua River northern tributary, Southwest Greenland, 2008-2011. <i>Earth System Science Data</i> , 2012 , 4, 1-12	10.5	24
52	Quantifying sources of error in multitemporal multisensor lake mapping. <i>International Journal of Remote Sensing</i> , 2013 , 34, 7887-7905	3.1	23
51	Influence of permafrost on water storage in West Siberian peatlands revealed from a new database of soil properties. <i>Permafrost and Periglacial Processes</i> , 2012 , 23, 69-79	4.2	23
50	Glacier outburst floods and outwash plain development: Skeiðarándur, Iceland. <i>Terra Nova</i> , 2000 , 12, 126	3	20
49	Global Characterization of Inland Water Reservoirs Using ICESat-2 Altimetry and Climate Reanalysis. <i>Geophysical Research Letters</i> , 2020 , 47, e2020GL088543	4.9	20
48	Characterizing supraglacial meltwater channel hydraulics on the Greenland Ice Sheet from in situ observations. <i>Earth Surface Processes and Landforms</i> , 2016 , 41, 2111-2122	3.7	20
47	Supraglacial Streams and Rivers. <i>Annual Review of Earth and Planetary Sciences</i> , 2019 , 47, 421-452	15.3	18
46	Recent Eurasian river discharge to the Arctic Ocean in the context of longer-term dendrohydrological records. <i>Journal of Geophysical Research</i> , 2007 , 112, n/a-n/a		18
45	Multi-modal albedo distributions in the ablation area of the southwestern Greenland Ice Sheet. <i>Cryosphere</i> , 2015 , 9, 905-923	5.5	17

44	Delineation of delta ecozones using interferometric SAR phase coherence. <i>Remote Sensing of Environment</i> , 2001 , 78, 229-238	13.2	17
43	Coldest Canadian Arctic communities face greatest reductions in shorefast sea ice. <i>Nature Climate Change</i> , 2020 , 10, 533-538	21.4	16
42	Temporal variations in river water surface elevation and slope captured by AirSWOT. <i>Remote Sensing of Environment</i> , 2019 , 224, 304-316	13.2	16
41	Automated High-Resolution Satellite Image Registration Using Supraglacial Rivers on the Greenland Ice Sheet. <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i> , 2017 , 10, 845-856	4.7	15
40	Interferometric SAR observations of ice topography and velocity changes related to the 1996, Gjalp subglacial eruption, Iceland. <i>International Journal of Remote Sensing</i> , 1999 , 20, 3031-3050	3.1	15
39	AirSWOT InSAR Mapping of Surface Water Elevations and Hydraulic Gradients Across the Yukon Flats Basin, Alaska. <i>Water Resources Research</i> , 2019 , 55, 937-953	5.4	15
38	A High-Resolution Airborne Color-Infrared Camera Water Mask for the NASA ABoVE Campaign. <i>Remote Sensing</i> , 2019 , 11, 2163	5	13
37	Supraglacial rivers on the northwest Greenland Ice Sheet, Devon Ice Cap, and Barnes Ice Cap mapped using Sentinel-2 imagery. <i>International Journal of Applied Earth Observation and Geoinformation</i> , 2019 , 78, 1-13	7.3	13
36	A new surface meltwater routing model for use on the Greenland Ice Sheet surface. <i>Cryosphere</i> , 2018 , 12, 3791-3811	5.5	13
35	Using multitemporal night-time lights data to compare regional development in Russia and China, 1992-2012. <i>International Journal of Remote Sensing</i> , 2017 , 38, 5962-5991	3.1	11
34	Technical Note: Semi-automated effective width extraction from time-lapse RGB imagery of a remote, braided Greenlandic river. <i>Hydrology and Earth System Sciences</i> , 2015 , 19, 2963-2969	5.5	11
33	Satellite remote sensing of river inundation area, stage, and discharge: a review 1997 , 11, 1427		11
32	U.S.-Russia venture probes Siberian peatlands' sensitivity to climate. <i>Eos</i> , 2000 , 81, 497	1.5	10
31	Within-storm variations in runoff and sediment export from a rapidly eroding coal-refuse deposit. <i>Earth Surface Processes and Landforms</i> , 1994 , 19, 369-375	3.7	10
30	Surface meltwater runoff on the Greenland ice sheet estimated from remotely sensed supraglacial lake infilling rate. <i>Remote Sensing of Environment</i> , 2019 , 234, 111459	13.2	9
29	Direct Observation of Winter Meltwater Drainage From the Greenland Ice Sheet. <i>Geophysical Research Letters</i> , 2020 , 47, e2019GL086521	4.9	8
28	Agents of Change in the New North. <i>Eurasian Geography and Economics</i> , 2011 , 52, 30-55	3.2	8
27	CryoSheds: a GIS modeling framework for delineating land-ice watersheds for the Greenland Ice Sheet. <i>GIScience and Remote Sensing</i> , 2016 , 53, 707-722	4.8	8

26	Rivers as political borders: a new subnational geospatial dataset. <i>Water Policy</i> , 2020 , 22, 293-312	1.6	7
25	Canada's Contributions to the SWOT Mission's Terrestrial Hydrology (SWOT-CTH). <i>Canadian Journal of Remote Sensing</i> , 2019 , 45, 116-138	1.8	6
24	Evaluation of CloudSat's Cloud-Profiling Radar for Mapping Snowfall Rates Across the Greenland Ice Sheet. <i>Journal of Geophysical Research D: Atmospheres</i> , 2020 , 125, e2019JD031411	4.4	5
23	Seasonal evolution of supraglacial lakes and rivers on the southwest Greenland Ice Sheet. <i>Journal of Glaciology</i> , 1-11	3.4	5
22	Supraglacial River Forcing of Subglacial Water Storage and Diurnal Ice Sheet Motion. <i>Geophysical Research Letters</i> , 2021 , 48, e2020GL091418	4.9	5
21	Satellite Remote Sensing of the Greenland Ice Sheet Ablation Zone: A Review. <i>Remote Sensing</i> , 2019 , 11, 2405	5	5
20	Small Arctic rivers mapped from Sentinel-2 satellite imagery and ArcticDEM. <i>Journal of Hydrology</i> , 2020 , 584, 124689	6	4
19	Airborne observations of arctic-boreal water surface elevations from AirSWOT Ka-Band InSAR and LVIS LiDAR. <i>Environmental Research Letters</i> , 2020 , 15, 105005	6.2	4
18	Short communication: a new dataset for estimating organic carbon storage to 3 m depth in soils of the northern circumpolar permafrost region		4
17	Relative Ages of Pleistocene Moraines Discerned from Pebble Counts: Eastern Sierra Nevada, California. <i>Physical Geography</i> , 2006 , 27, 223-235	1.8	3
16	A high temporal resolution data set of ERS scatterometer radar backscatter for research in Arctic and sub-Arctic regions. <i>Polar Record</i> , 2002 , 38, 115-120	0.5	3
15	Intercomparison of surface meltwater routing models for the Greenland ice sheet and influence on subglacial effective pressures. <i>Cryosphere</i> , 2020 , 14, 3349-3365	5.5	3
14	Controls on Eurasian coastal sea ice formation, melt onset and decay from ERS scatterometry: regional contrasts and effects of river influx. <i>International Journal of Remote Sensing</i> , 2003 , 24, 5283-5315	3.1	2
13	Proglacial river dataset from the Akuliarusiarsuup Kuua River northern tributary, Southwest Greenland, 2008-2010		2
12	Evidence of meltwater retention within the Greenland ice sheet		2
11	Diverse supraglacial drainage patterns on the Devon ice Cap, Arctic Canada. <i>Journal of Maps</i> , 2020 , 16, 834-846	2.2	2
10	Discharge Estimation From Dense Arrays of Pressure Transducers. <i>Water Resources Research</i> , 2021 , 57, e2020WR028714	5.4	2
9	Landsat-derived bathymetry of lakes on the Arctic Coastal Plain of northern Alaska. <i>Earth System Science Data</i> , 2021 , 13, 1135-1150	10.5	2

8	A unified model for transient subglacial water pressure and basal sliding. <i>Journal of Glaciology</i> ,1-11	3.4	2
7	Surface meltwater runoff routing through a coupled supraglacial-proglacial drainage system, Inglefield Land, northwest Greenland. <i>International Journal of Applied Earth Observation and Geoinformation</i> , 2022 , 106, 102647	7.3	1
6	Advancing Field-Based GNSS Surveying for Validation of Remotely Sensed Water Surface Elevation Products. <i>Frontiers in Earth Science</i> ,8,	3.5	1
5	Mapping the bathymetry of supraglacial lakes and streams on the Greenland Ice Sheet using field measurements and high resolution satellite images		1
4	Hourly surface meltwater routing for a Greenlandic supraglacial catchment across hillslopes and through a dense topological channel network. <i>Cryosphere</i> , 2021 , 15, 2315-2331	5.5	1
3	Changes in sea ice travel conditions in Uummannaq Fjord, Greenland (1985-2019) assessed through remote sensing and transportation accessibility modeling. <i>Polar Geography</i> ,1-15	2.2	1
2	Super-Resolution Surface Water Mapping on the Canadian Shield Using Planet CubeSat Images and a Generative Adversarial Network. <i>Canadian Journal of Remote Sensing</i> , 2021 , 47, 261-275	1.8	0
1	Development of Ice-Shelf Estuaries Promotes Fractures and Calving.. <i>Nature Geoscience</i> , 2021 , 14, 899-908.	3	