Tobias Bolch

List of Publications by Year
in descending order

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114 papers	15,809 citations	29994 54 h-index	31759 101 g-index
173 all docs	173 docs citations	173 times ranked	7478 citing authors

#	Article	IF	Citations
1	The State and Fate of Himalayan Glaciers. Science, 2012, 336, 310-314.	6.0	1,633
2	A Reconciled Estimate of Glacier Contributions to Sea Level Rise: 2003 to 2009. Science, 2013, 340, 852-857.	6.0	1,044
3	The Randolph Glacier Inventory: a globally complete inventory of glaciers. Journal of Glaciology, 2014, 60, 537-552.	1.1	895
4	Importance and vulnerability of the worldâ€™s water towers. Nature, 2020, 577, 364-369.	13.7	885
5	Climate change impacts on glaciers and runoff in Tien Shan (Central Asia). Nature Climate Change, 2012, 2, 725-731.	8.1	714
6	Landsat-based inventory of glaciers in western Canada, 1985â€“2005. Remote Sensing of Environment, 2010, 114, 127-137.	4.6	455
7	Response of debris-covered glaciers in the Mount Everest region to recent warming, and implications for outburst flood hazards. Earth-Science Reviews, 2012, 114, 156-174.	4.0	449
8	On the accuracy of glacier outlines derived from remote-sensing data. Annals of Glaciology, 2013, 54, 171-182.	2.8	425
9	Multi-decadal mass loss of glaciers in the Everest area (Nepal Himalaya) derived from stereo imagery. Cryosphere, 2011, 5, 349-358.	1.5	384
10	Planimetric and volumetric glacier changes in the Khumbu Himal, Nepal, since 1962 using Corona, Landsat TM and ASTER data. Journal of Glaciology, 2008, 54, 592-600.	1.1	337
11	Substantial glacier mass loss in the Tien Shan over the past 50 years. Nature Geoscience, 2015, 8, 716-722.	5.4	332
12	Lake volume and groundwater storage variations in Tibetan Plateau's endorheic basin. Geophysical Research Letters, 2017, 44, 5550-5560.	1.5	305
13	Glacier changes in the Garhwal Himalaya, India, from 1968 to 2006 based on remote sensing. Journal of Glaciology, 2011, 57, 543-556.	1.1	304
14	The imbalance of the Asian water tower. Nature Reviews Earth & Environment, 2022, 3, 618-632.	12.2	286
15	Climate change and glacier retreat in northern Tien Shan (Kazakhstan/Kyrgyzstan) using remote sensing data. Global and Planetary Change, 2007, 56, 1-12.	1.6	265
16	Identification of glacier motion and potentially dangerous glacial lakes in the Mt. Everest region/Nepal using spaceborne imagery. Natural Hazards and Earth System Sciences, 2008, 8, 1329-1340.	1.5	264
17	Response of Tibetan Plateau lakes to climate change: Trends, patterns, and mechanisms. Earth-Science Reviews, 2020, 208, 103269.	4.0	259
18	The glaciers climate change initiative: Methods for creating glacier area, elevation change and velocity products. Remote Sensing of Environment, 2015, 162, 408-426.	4.6	253

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19	Glacier mass changes on the Tibetan Plateau 2003â€“2009 derived from ICESat laser altimetry measurements. Environmental Research Letters, 2014, 9, 014009.	2.2	243
20	A glacier inventory for the western Nyainqentanglha Range and the Nam Co Basin, Tibet, and glacier changes 1976â€“2009. Cryosphere, 2010, 4, 419-433.	1.5	239
21	Extensive and drastically different alpine lake changes on Asia's high plateaus during the past four decades. Geophysical Research Letters, 2017, 44, 252-260.	1.5	223
22	Estimating the volume of glaciers in the Himalayanâ€“Karakoram region using different methods. Cryosphere, 2014, 8, 2313-2333.	1.5	203
23	Glacier mapping: a review with special reference to the Indian Himalayas. Progress in Physical Geography, 2009, 33, 672-704.	1.4	190
24	Heterogeneous mass loss of glaciers in the Aksu-Tarim Catchment (Central Tien Shan) revealed by 1976 KH-9 Hexagon and 2009 SPOT-5 stereo imagery. Remote Sensing of Environment, 2013, 130, 233-244.	4.6	183
25	Region-wide glacier mass budgets and area changes for the Central Tien Shan between ~1975 and 1999 using Hexagon KH-9 imagery. Global and Planetary Change, 2015, 128, 1-13.	1.6	172
26	Brief communication: Glaciers in the Hunza catchment (Karakoram) have been nearly in balance since the 1970s. Cryosphere, 2017, 11, 531-539.	1.5	165
27	Identification of potentially dangerous glacial lakes in the northern Tien Shan. Natural Hazards, 2011, 59, 1691-1714.	1.6	159
28	The influence of debris cover and glacial lakes on the recession of glaciers in Sikkim Himalaya, India. Journal of Glaciology, 2013, 59, 1035-1046.	1.1	157
29	Heterogeneity in glacier response in the upper Shyok valley, northeast Karakoram. Cryosphere, 2013, 7, 1385-1398.	1.5	153
30	Attribution of streamflow trends in snow and glacier meltâ€dominated catchments of the <scp>T</scp>arim <scp>R</scp>iver, Central <scp>A</scp>sia. Water Resources Research, 2015, 51, 4727-4750.	1.7	146
31	Status and Change of the Cryosphere in the Extended Hindu Kush Himalaya Region. , 2019, , 209-255.		139
32	The first complete inventory of the local glaciers and ice caps on Greenland. Cryosphere, 2012, 6, 1483-1495.	1.5	133
33	Glacial lakes exacerbate Himalayan glacier mass loss. Scientific Reports, 2019, 9, 18145.	1.6	130
34	Mass-balance changes of the debris-covered glaciers in the Langtang Himal, Nepal, from 1974 to 1999. Journal of Glaciology, 2015, 61, 373-386.	1.1	129
35	High Mountain Asian glacier response to climate revealed by multi-temporal satellite observations since the 1960s. Nature Communications, 2021, 12, 4133.	5.8	120
36	Mapping of debris-covered glaciers in the Garhwal Himalayas using ASTER DEMs and thermal data. International Journal of Remote Sensing, 2011, 32, 8095-8119.	1.3	118

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37	Mass loss of Greenland's glaciers and ice caps 2003â€“2008 revealed from ICESat laser altimetry data. Geophysical Research Letters, 2013, 40, 875-881.	1.5	117
38	Glacier fluctuations between 1975 and 2008 in the Greater Himalaya Range of Zanskar, southern Ladakh. Journal of Mountain Science, 2011, 8, 374-389.	0.8	116
39	Early 21st century snow cover state over the western river basins of the Indus River system. Hydrology and Earth System Sciences, 2014, 18, 4077-4100.	1.9	115
40	Glacier Water Resources on the Eastern Slopes of the Canadian Rocky Mountains. Canadian Water Resources Journal, 2011, 36, 109-134.	0.5	114
41	Error sources and guidelines for quality assessment of glacier area, elevation change, and velocity products derived from satellite data in the Glaciers_cci project. Remote Sensing of Environment, 2017, 203, 256-275.	4.6	109
42	Heterogeneous glacier thinning patterns over the last 40 years in Langtang Himal, Nepal. Cryosphere, 2016, 10, 2075-2097.	1.5	108
43	Potentially dangerous glacial lakes across the Tibetan Plateau revealed using a large-scale automated assessment approach. Science Bulletin, 2019, 64, 435-445.	4.3	107
44	Four decades of glacier variations at Muztagh Ata (eastern Pamir): a multi-sensor study including Hexagon KH-9 and PlÃ©iades data. Cryosphere, 2015, 9, 2071-2088.	1.5	98
45	Tracing glacier changes since the 1960s on the south slope of Mt. Everest (central Southern Himalaya) using optical satellite imagery. Cryosphere, 2014, 8, 1297-1315.	1.5	95
46	Overall recession and mass budget of Gangotri Glacier, Garhwal Himalayas, from 1965 to 2015 using remote sensing data. Journal of Glaciology, 2016, 62, 1115-1133.	1.1	92
47	A consistent glacier inventory for Karakoram and Pamir derived from Landsat data: distribution of debris cover and mapping challenges. Earth System Science Data, 2018, 10, 1807-1827.	3.7	86
48	A Comparison of Pixel- and Object-Based Glacier Classification With Optical Satellite Images. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2014, 7, 853-862.	2.3	81
49	Glacial lake evolution and glacierâ€“lake interactions in the Poiqu River basin, central Himalaya, 1964â€“2017. Journal of Glaciology, 2019, 65, 347-365.	1.1	80
50	High Mountain Asia hydropower systems threatened by climate-driven landscape instability. Nature Geoscience, 2022, 15, 520-530.	5.4	73
51	Automated detection of rock glaciers using deep learning and object-based image analysis. Remote Sensing of Environment, 2020, 250, 112033.	4.6	71
52	Ice Volume and Subglacial Topography for Western Canadian Glaciers from Mass Balance Fields, Thinning Rates, and a Bed Stress Model. Journal of Climate, 2013, 26, 4282-4303.	1.2	70
53	Comprehensive estimation of lake volume changes on the Tibetan Plateau during 1976â€“2019 and basin-wide glacier contribution. Science of the Total Environment, 2021, 772, 145463.	3.9	70
54	Factors controlling the accelerated expansion of Imja Lake, Mount Everest region, Nepal. Annals of Glaciology, 2016, 57, 245-257.	2.8	64

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55	Structure-from-Motion Using Historical Aerial Images to Analyse Changes in Glacier Surface Elevation. Remote Sensing, 2017, 9, 1021.	1.8	60
56	Glacier characteristics and changes in the Sary-Jaz River Basin (Central Tien Shan, Kyrgyzstan) â€“ 1990â€“2010. Remote Sensing Letters, 2013, 4, 725-734.	0.6	59
57	Asian glaciers are a reliable water source. Nature, 2017, 545, 161-162.	13.7	59
58	Mass changes of Southern and Northern Inylchek Glacier, Central Tian Shan, Kyrgyzstan, during â^¼1975 and 2007 derived from remote sensing data. Cryosphere, 2015, 9, 703-717.	1.5	57
59	Glacier mass budget and climate reanalysis data indicate a climatic shift around 2000 in Lahaul-Spiti, western Himalaya. Climatic Change, 2018, 148, 219-233.	1.7	54
60	Mapping of glacial lakes using Sentinel-1 and Sentinel-2 data and a random forest classifier: Strengths and challenges. Science of Remote Sensing, 2020, 2, 100008.	2.2	54
61	Generation and evaluation of multitemporal digital terrain models of the Mt. Everest area from different optical sensors. ISPRS Journal of Photogrammetry and Remote Sensing, 2011, 66, 927-940.	4.9	51
62	Supra-glacial debris cover changes in the Greater Caucasus from 1986 to 2014. Cryosphere, 2020, 14, 585-598.	1.5	50
63	Multi-decadal mass balance series of three Kyrgyz glaciers inferred from modelling constrained with repeated snow line observations. Cryosphere, 2018, 12, 1899-1919.	1.5	48
64	Geomorphometry of Cerro Sillajhuay (Andes, Chile/Bolivia): Comparison of Digital Elevation Models (DEMs) from ASTER Remote Sensing Data and Contour Maps. Geocarto International, 2005, 20, 23-33.	1.7	47
65	Area and mass changes of Siachen Glacier (East Karakoram). Journal of Glaciology, 2017, 63, 148-163.	1.1	45
66	Analysis of current trends in climate parameters, river discharge and glaciers in the Aksu River basin (Central Asia). Hydrological Sciences Journal, 2015, 60, 566-590.	1.2	43
67	Glacier mass changes in Rongbuk catchment on Mt. Qomolangma from 1974 to 2006 based on topographic maps and ALOS PRISM data. Journal of Hydrology, 2015, 530, 273-280.	2.3	42
68	Characteristics and Origin of Rock Glaciers in Northern Tien Shan (Kazakhstan/Kyrgyzstan). Permafrost and Periglacial Processes, 2014, 25, 320-332.	1.5	40
69	Surge-Type Glaciers in the Tien Shan (Central Asia). Arctic, Antarctic, and Alpine Research, 2017, 49, 147-171.	0.4	40
70	A new satellite-derived glacier inventory for western Alaska. Annals of Glaciology, 2011, 52, 135-143.	2.8	39
71	Comparison and Correction of High-Mountain Precipitation Data Based on Glacio-Hydrological Modeling in the Tarim River Headwaters (High Asia). Journal of Hydrometeorology, 2018, 19, 777-801.	0.7	39
72	Unravelling the evolution of Zmuttgletscher and its debris cover since the end of the Little Ice Age. Cryosphere, 2019, 13, 1889-1909.	1.5	38

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73	On the influence of debris cover on glacier morphology: How high-relief structures evolve from smooth surfaces. Geomorphology, 2020, 357, 107092.	1.1	37
74	More dynamic than expected: an updated survey of surging glaciers in the Pamir. Earth System Science Data, 2020, 12, 3161-3176.	3.7	34
75	Inventory and changes of rock glacier creep speeds in Ile Alatau and KungÃ¶y Ala-Too, northern Tien Shan, since the 1950s. Cryosphere, 2021, 15, 927-949.	1.5	31
76	A regionally resolved inventory of High Mountain Asia surge-type glaciers, derived from a multi-factor remote sensing approach. Cryosphere, 2022, 16, 603-623.	1.5	31
77	Mapping ice cliffs on debris-covered glaciers using multispectral satellite images. Remote Sensing of Environment, 2021, 253, 112201.	4.6	30
78	Towards automated mapping and monitoring of potentially dangerous glacial lakes in Bhutan Himalaya using Sentinel-1 Synthetic Aperture Radar data. International Journal of Remote Sensing, 2019, 40, 4642-4667.	1.3	29
79	Six Decades of Glacier Mass Changes around Mt. Everest Are Revealed by Historical and Contemporary Images. One Earth, 2020, 3, 608-620.	3.6	29
80	Brief communication "Historical glacier length changes in West Greenland". Cryosphere, 2012, 6, 1339-1343.	1.5	28
81	Mass changes of alpine glaciers at the eastern margin of the Northern and Southern Patagonian Icefields between 2000 and 2012. Journal of Glaciology, 2017, 63, 258-272.	1.1	28
82	Glacier Mass Loss during the 1960s and 1970s in the Ak-Shirak Range (Kyrgyzstan) from Multiple Stereoscopic Corona and Hexagon Imagery. Remote Sensing, 2017, 9, 275.	1.8	28
83	Contrasting surface velocities between lake- and land-terminating glaciers in the Himalayan region. Cryosphere, 2021, 15, 5577-5599.	1.5	28
84	Occurrence, evolution and ice content of iceâ€debris complexes in the Akâ€Shiirak, Central Tien Shan revealed by geophysical and remotelyâ€sensed investigations. Earth Surface Processes and Landforms, 2019, 44, 129-143.	1.2	27
85	New evidence of glacier surges in the Central Andes of Argentina and Chile. Progress in Physical Geography, 2018, 42, 792-825.	1.4	23
86	The future sea-level rise contribution of Greenlandâ€™s glaciers and ice caps. Environmental Research Letters, 2013, 8, 025005.	2.2	22
87	Six Decades (1958â€“2018) of Geodetic Glacier Mass Balance in Monte San Lorenzo, Patagonian Andes. Frontiers in Earth Science, 2019, 7, .	0.8	21
88	Glacier branch lines and glacier ice thickness estimation for debris-covered glaciers in the Central Tien Shan. Journal of Glaciology, 2018, 64, 835-849.	1.1	19
89	Glacier Mapping and Monitoring Using Multispectral Data. , 2014, , 75-112.		18
90	The presence and influence of glacier surging around the Geladandong ice caps, North East Tibetan Plateau. Advances in Climate Change Research, 2021, 12, 299-299.	2.1	17

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91	Monitoring glacial lake outburst flood susceptibility using Sentinel-1 SAR data, Google Earth Engine, and persistent scatterer interferometry. Remote Sensing of Environment, 2022, 271, 112910.	4.6	16
92	An efficient representation of glacier dynamics in a semi-distributed hydrological model to bridge glacier and river catchment scales. Journal of Hydrology, 2019, 573, 136-152.	2.3	15
93	Glacier and rock glacier changes since the 1950s in the La Laguna catchment, Chile. Cryosphere, 2022, 16, 647-665.	1.5	15
94	Glacier area and mass changes since 1964 in the Ala Archa Valley, Kyrgyz Ala-Too, northern Tien Shan. Led I Sneg, 2015, 55, 28-39.	0.1	14
95	Knowledge Priorities on Climate Change and Water in the Upper Indus Basin: A Horizon Scanning Exercise to Identify the Top 100 Research Questions in Social and Natural Sciences. Earth's Future, 2022, 10, .	2.4	14
96	Future Climate Change and Its Impact on Runoff Generation from the Debris-Covered Inylchek Glaciers, Central Tian Shan, Kyrgyzstan. Water (Switzerland), 2018, 10, 1513.	1.2	13
97	Moraine-dammed glacial lakes and threat of glacial debris flows in South-East Kazakhstan. Earth-Science Reviews, 2022, 229, 103999.	4.0	13
98	Snow Cover Distribution in the Aksu Catchment (Central Tien Shan) 1986â€“2013 Based on AVHRR and MODIS Data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2015, 8, 5361-5375.	2.3	12
99	Incorporating InSAR kinematics into rock glacier inventories: insights from 11 regions worldwide. Cryosphere, 2022, 16, 2769-2792.	1.5	12
100	Declining glaciers endanger sustainable development of the oases along the Aksu-Tarim River (Central) Tj ETQq0 0 0 rgBT /Overlock 10 T	3.2	9
101	Past and Future Glacier Changes in the Indus River Basin. , 2019, , 85-97.		8
102	Earth Observation to Investigate Occurrence, Characteristics and Changes of Glaciers, Glacial Lakes and Rock Glaciers in the Poiqu River Basin (Central Himalaya). Remote Sensing, 2022, 14, 1927.	1.8	8
103	Himalayan Glaciers (India, Bhutan, Nepal): Satellite Observations of Thinning and Retreat. , 2014, , 549-582.		7
104	Digital Terrain Modeling and Glacier Topographic Characterization. , 2014, , 113-144.		7
105	Identification of Potentially Dangerous Glacial Lakes in the Northern Tian Shan. , 2012, , 369-398.		6
106	Projected climate change and its impacts on glaciers and water resources in the headwaters of the Tarim River, NW China/Kyrgyzstan. Climatic Change, 2022, 171, 1.	1.7	6
107	GIS for Glaciers and Glacial Landforms. , 2018, , 112-139.		5
108	Rock Glaciers. , 2022, , 75-118.		5

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109	Glacier Changes Since the Little Ice Age. Geography of the Physical Environment, 2019, , 23-42.	0.2	4
110	An Integrative and Joint Approach to Climate Impacts, Hydrological Risks and Adaptation in the Indian Himalayan Region. , 2020, , 553-573.		3
111	Glacier Variations in the Trans Alai Massif and the Lake Karakul Catchment (Northeastern Pamir) Measured from Space. , 2016, , 139-153.		3
112	Satellite-based glacier monitoring in the ESA project Glaciers_cci. , 2012, , .		1
113	Mountains, Lowlands, andÂCoasts. , 2015, , 201-217.		0
114	Mountains, lowlands, and coasts: The physiography of cold landscapes. , 2021, , 199-213.		0