Tobias Bolch

List of Publications by Year
in descending order

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	Declining glaciers endanger sustainable development of the oases along the Aksu-Tarim River (Central) Tj ETQq1 1 0.784314 rgBT /Over	3.2	9
2	Rock Glaciers. , 2022, , 75-118.		5
3	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
4	Glacier and rock glacier changes since the 1950s in the La Laguna catchment, Chile. Cryosphere, 2022, 16, 647-665.	1.5	15
5	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
6	Moraine-dammed glacial lakes and threat of glacial debris flows in South-East Kazakhstan. Earth-Science Reviews, 2022, 229, 103999.	4.0	13
7	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
8	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
9	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
10	The imbalance of the Asian water tower. Nature Reviews Earth & Environment, 2022, 3, 618-632.	12.2	286
11	High Mountain Asia hydropower systems threatened by climate-driven landscape instability. Nature Geoscience, 2022, 15, 520-530.	5.4	73
12	Incorporating InSAR kinematics into rock glacier inventories: insights from 11 regions worldwide. Cryosphere, 2022, 16, 2769-2792.	1.5	12
13	Mapping ice cliffs on debris-covered glaciers using multispectral satellite images. Remote Sensing of Environment, 2021, 253, 112201.	4.6	30
14	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
15	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
16	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
17	High Mountain Asian glacier response to climate revealed by multi-temporal satellite observations since the 1960s. Nature Communications, 2021, 12, 4133.	5.8	120
18	Mountains, lowlands, and coasts: The physiography of cold landscapes. , 2021, , 199-213.		0

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19	Contrasting surface velocities between lake- and land-terminating glaciers in the Himalayan region. Cryosphere, 2021, 15, 5577-5599.	1.5	28
20	Importance and vulnerability of the worldâ€™s water towers. Nature, 2020, 577, 364-369.	13.7	885
21	Automated detection of rock glaciers using deep learning and object-based image analysis. Remote Sensing of Environment, 2020, 250, 112033.	4.6	71
22	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
23	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
24	Response of Tibetan Plateau lakes to climate change: Trends, patterns, and mechanisms. Earth-Science Reviews, 2020, 208, 103269.	4.0	259
25	Supra-glacial debris cover changes in the Greater Caucasus from 1986 to 2014. Cryosphere, 2020, 14, 585-598.	1.5	50
26	On the influence of debris cover on glacier morphology: How high-relief structures evolve from smooth surfaces. Geomorphology, 2020, 357, 107092.	1.1	37
27	An Integrative and Joint Approach to Climate Impacts, Hydrological Risks and Adaptation in the Indian Himalayan Region. , 2020, , 553-573.		3
28	More dynamic than expected: an updated survey of surging glaciers in the Pamir. Earth System Science Data, 2020, 12, 3161-3176.	3.7	34
29	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
30	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
31	Past and Future Glacier Changes in the Indus River Basin. , 2019, , 85-97.		8
32	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
33	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
34	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
35	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
36	Glacial lakes exacerbate Himalayan glacier mass loss. Scientific Reports, 2019, 9, 18145.	1.6	130

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37	Six Decades (1958â€“2018) of Geodetic Glacier Mass Balance in Monte San Lorenzo, Patagonian Andes. Frontiers in Earth Science, 2019, 7, .	0.8	21
38	Status and Change of the Cryosphere in the Extended Hindu Kush Himalaya Region. , 2019, , 209-255.		139
39	Glacier Changes Since the Little Ice Age. Geography of the Physical Environment, 2019, , 23-42.	0.2	4
40	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
41	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
42	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
43	New evidence of glacier surges in the Central Andes of Argentina and Chile. Progress in Physical Geography, 2018, 42, 792-825.	1.4	23
44	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
45	GIS for Glaciers and Glacial Landforms. , 2018, , 112-139.		5
46	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
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	Area and mass changes of Siachen Glacier (East Karakoram). Journal of Glaciology, 2017, 63, 148-163.	1.1	45
49	Surge-Type Glaciers in the Tien Shan (Central Asia). Arctic, Antarctic, and Alpine Research, 2017, 49, 147-171.	0.4	40
50	Asian glaciers are a reliable water source. Nature, 2017, 545, 161-162.	13.7	59
51	Lake volume and groundwater storage variations in Tibetan Plateau's endorheic basin. Geophysical Research Letters, 2017, 44, 5550-5560.	1.5	305
52	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
53	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
54	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

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55	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
56	Structure-from-Motion Using Historical Aerial Images to Analyse Changes in Glacier Surface Elevation. Remote Sensing, 2017, 9, 1021.	1.8	60
57	Brief communication: Glaciers in the Hunza catchment (Karakoram) have been nearly in balance since the 1970s. Cryosphere, 2017, 11, 531-539.	1.5	165
58	Heterogeneous glacier thinning patterns over the last 40 years in Langtang Himal, Nepal. Cryosphere, 2016, 10, 2075-2097.	1.5	108
59	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
60	Factors controlling the accelerated expansion of Imja Lake, Mount Everest region, Nepal. Annals of Glaciology, 2016, 57, 245-257.	2.8	64
61	Glacier Variations in the Trans Alai Massif and the Lake Karakul Catchment (Northeastern Pamir) Measured from Space. , 2016, , 139-153.		3
62	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
63	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
64	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
65	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
66	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
67	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
68	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
69	Mountains, Lowlands, andÂCoasts. , 2015, , 201-217.		0
70	Substantial glacier mass loss in the Tien Shan over the past 50 years. Nature Geoscience, 2015, 8, 716-722.	5.4	332
71	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
72	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

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73	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
74	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
75	Estimating the volume of glaciers in the Himalayanâ€“Karakoram region using different methods. Cryosphere, 2014, 8, 2313-2333.	1.5	203
76	The Randolph Glacier Inventory: a globally complete inventory of glaciers. Journal of Glaciology, 2014, 60, 537-552.	1.1	895
77	Glacier mass changes on the Tibetan Plateau 2003â€“2009 derived from ICESat laser altimetry measurements. Environmental Research Letters, 2014, 9, 014009.	2.2	243
78	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
79	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
80	Characteristics and Origin of Rock Glaciers in Northern Tien Shan (Kazakhstan/Kyrgyzstan). Permafrost and Periglacial Processes, 2014, 25, 320-332.	1.5	40
81	Himalayan Glaciers (India, Bhutan, Nepal): Satellite Observations of Thinning and Retreat. , 2014, , 549-582.		7
82	Glacier Mapping and Monitoring Using Multispectral Data. , 2014, , 75-112.		18
83	Digital Terrain Modeling and Glacier Topographic Characterization. , 2014, , 113-144.		7
84	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
85	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
86	A Reconciled Estimate of Glacier Contributions to Sea Level Rise: 2003 to 2009. Science, 2013, 340, 852-857.	6.0	1,044
87	On the accuracy of glacier outlines derived from remote-sensing data. Annals of Glaciology, 2013, 54, 171-182.	2.8	425
88	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
89	The future sea-level rise contribution of Greenlandâ€™s glaciers and ice caps. Environmental Research Letters, 2013, 8, 025005.	2.2	22
90	Heterogeneity in glacier response in the upper Shyok valley, northeast Karakoram. Cryosphere, 2013, 7, 1385-1398.	1.5	153

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91	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
92	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
93	Satellite-based glacier monitoring in the ESA project Glaciers_cci. , 2012, , .		1
94	The first complete inventory of the local glaciers and ice caps on Greenland. Cryosphere, 2012, 6, 1483-1495.	1.5	133
95	Brief communication "Historical glacier length changes in West Greenland". Cryosphere, 2012, 6, 1339-1343.	1.5	28
96	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
97	Climate change impacts on glaciers and runoff in Tien Shan (Central Asia). Nature Climate Change, 2012, 2, 725-731.	8.1	714
98	The State and Fate of Himalayan Glaciers. Science, 2012, 336, 310-314.	6.0	1,633
99	Identification of Potentially Dangerous Glacial Lakes in the Northern Tian Shan. , 2012, , 369-398.		6
100	A new satellite-derived glacier inventory for western Alaska. Annals of Glaciology, 2011, 52, 135-143.	2.8	39
101	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
102	Identification of potentially dangerous glacial lakes in the northern Tien Shan. Natural Hazards, 2011, 59, 1691-1714.	1.6	159
103	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
104	Multi-decadal mass loss of glaciers in the Everest area (Nepal Himalaya) derived from stereo imagery. Cryosphere, 2011, 5, 349-358.	1.5	384
105	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
106	Glacier Water Resources on the Eastern Slopes of the Canadian Rocky Mountains. Canadian Water Resources Journal, 2011, 36, 109-134.	0.5	114
107	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
108	Landsat-based inventory of glaciers in western Canada, 1985â€“2005. Remote Sensing of Environment, 2010, 114, 127-137.	4.6	455

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109	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
110	Glacier mapping: a review with special reference to the Indian Himalayas. Progress in Physical Geography, 2009, 33, 672-704.	1.4	190
111	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
112	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
113	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
114	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