

JÃ¼rg Schweizer

List of Publications by Year in descending order

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142
papers

4,419
citations

94433

37
h-index

161849

54
g-index

199
all docs

199
docs citations

199
times ranked

1412
citing authors

#	ARTICLE	IF	CITATIONS
1	Snow avalanche formation. <i>Reviews of Geophysics</i> , 2003, 41, .	23.0	456
2	Review of spatial variability of snowpack properties and its importance for avalanche formation. <i>Cold Regions Science and Technology</i> , 2008, 51, 253-272.	3.5	112
3	Characteristics of wet-snow avalanche activity: 20 years of observations from a high alpine valley (Dischma, Switzerland). <i>Natural Hazards</i> , 2009, 50, 97-108.	3.4	90
4	Snow cover properties for skier triggering of avalanches. <i>Cold Regions Science and Technology</i> , 2001, 33, 207-221.	3.5	79
5	Review of dry snow slab avalanche release. <i>Cold Regions Science and Technology</i> , 1999, 30, 43-57.	3.5	76
6	Verification of regional snowpack stability and avalanche danger. <i>Cold Regions Science and Technology</i> , 2003, 37, 277-288.	3.5	74
7	Characteristics of human-triggered avalanches. <i>Cold Regions Science and Technology</i> , 2001, 33, 147-162.	3.5	69
8	Critical energy release rates of weak snowpack layers determined in field experiments. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	68
9	Snow fracture in relation to slab avalanche release: critical state for the onset of crack propagation. <i>Cryosphere</i> , 2017, 11, 217-228.	3.9	68
10	Monitoring avalanche activity using a seismic sensor. <i>Cold Regions Science and Technology</i> , 2011, 69, 165-176.	3.5	66
11	Wet-snow instabilities: comparison of measured and modelled liquid water content and snow stratigraphy. <i>Annals of Glaciology</i> , 2011, 52, 201-208.	1.4	62
12	Continuous snowpack monitoring using upward-looking ground-penetrating radar technology. <i>Journal of Glaciology</i> , 2014, 60, 509-525.	2.2	61
13	Laboratory experiments on shear failure of snow. <i>Annals of Glaciology</i> , 1998, 26, 97-102.	1.4	60
14	On forecasting large and infrequent snow avalanches. <i>Cold Regions Science and Technology</i> , 2009, 59, 234-241.	3.5	59
15	Texture and strength changes of buried surface-hoar layers with implications for dry snow-slab avalanche release. <i>Journal of Glaciology</i> , 2000, 46, 151-160.	2.2	56
16	Snowpack properties for snow profile analysis. <i>Cold Regions Science and Technology</i> , 2003, 37, 233-241.	3.5	54
17	A threshold sum approach to stability evaluation of manual snow profiles. <i>Cold Regions Science and Technology</i> , 2007, 47, 50-59.	3.5	52
18	Upward-looking ground-penetrating radar for measuring wet-snow properties. <i>Cold Regions Science and Technology</i> , 2011, 69, 129-138.	3.5	52

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19	Measuring Snow Liquid Water Content with Low-Cost GPS Receivers. <i>Sensors</i> , 2014, 14, 20975-20999.	3.8	52
20	Seasonal and diurnal cycles of liquid water in snow – Measurements and modeling. <i>Journal of Geophysical Research F: Earth Surface</i> , 2015, 120, 2139-2154.	2.8	52
21	The skier’s zone of influence in triggering slab avalanches. <i>Annals of Glaciology</i> , 2001, 32, 314-320.	1.4	51
22	Modeling of crack propagation in weak snowpack layers using the discrete element method. <i>Cryosphere</i> , 2015, 9, 1915-1932.	3.9	51
23	Avalanche forecasting – an expert system approach. <i>Journal of Glaciology</i> , 1996, 42, 318-332.	2.2	50
24	Snow profile interpretation for stability evaluation. <i>Cold Regions Science and Technology</i> , 2001, 33, 179-188.	3.5	50
25	Evaluating and improving the stability predictions of the snow cover model SNOWPACK. <i>Cold Regions Science and Technology</i> , 2006, 46, 52-59.	3.5	49
26	Seismic sensor array for monitoring an avalanche start zone: design, deployment and preliminary results. <i>Journal of Glaciology</i> , 2011, 57, 267-276.	2.2	49
27	Skier triggering, snow temperatures and the stability index for dry-slab avalanche initiation. <i>Journal of Glaciology</i> , 1999, 45, 190-200.	2.2	47
28	Estimating the effective elastic modulus and specific fracture energy of snowpack layers from field experiments. <i>Journal of Glaciology</i> , 2016, 62, 997-1007.	2.2	47
29	Spatial variability of micropenetration resistance in snow layers on a small slope. <i>Annals of Glaciology</i> , 2004, 38, 202-208.	1.4	46
30	A process-based approach to estimate point snow instability. <i>Cryosphere</i> , 2015, 9, 837-847.	3.9	45
31	The role of bed separation and friction in sliding over an undeformable bed. <i>Journal of Glaciology</i> , 1992, 38, 77-92.	2.2	43
32	Rheological measurements of the viscoelastic properties of snow. <i>Annals of Glaciology</i> , 2001, 32, 44-50.	1.4	43
33	Modelling snow failure with a fibre bundle model. <i>Journal of Glaciology</i> , 2009, 55, 997-1002.	2.2	42
34	Retrieval of Snow Water Equivalent, Liquid Water Content, and Snow Height of Dry and Wet Snow by Combining GPS Signal Attenuation and Time Delay. <i>Water Resources Research</i> , 2019, 55, 4465-4487.	4.2	42
35	Statistical forecasting of regional avalanche danger using simulated snow-cover data. <i>Journal of Glaciology</i> , 2009, 55, 761-768.	2.2	41
36	A new mixed-mode failure criterion for weak snowpack layers. <i>Geophysical Research Letters</i> , 2015, 42, 1427-1432.	4.0	41

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37	Measurement of the deformation field associated with fracture propagation in weak snowpack layers. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	40
38	A novel sensor combination (upGPRâ€CGPS) to continuously and nondestructively derive snow cover properties. <i>Geophysical Research Letters</i> , 2015, 42, 3397-3405.	4.0	40
39	Speed and attenuation of acoustic waves in snow: Laboratory experiments and modeling with Biot's theory. <i>Cold Regions Science and Technology</i> , 2016, 125, 1-11.	3.5	40
40	Failure of a layer of buried surface hoar. <i>Geophysical Research Letters</i> , 2010, 37, .	4.0	39
41	Analysis of the snow-atmosphere energy balance during wet-snow instabilities and implications for avalanche prediction. <i>Cryosphere</i> , 2013, 7, 205-216.	3.9	39
42	On the fracture toughness of snow. <i>Annals of Glaciology</i> , 2004, 38, 1-8.	1.4	38
43	Snow stability variation on small slopes. <i>Cold Regions Science and Technology</i> , 2003, 37, 453-465.	3.5	36
44	Robust snow avalanche detection using supervised machine learning with infrasonic sensor arrays. <i>Cold Regions Science and Technology</i> , 2015, 111, 60-66.	3.5	36
45	Measurements of weak layer fracture energy. <i>Cold Regions Science and Technology</i> , 2011, 69, 139-144.	3.5	35
46	Evaluation of slope stability with respect to snowpack spatial variability. <i>Journal of Geophysical Research F: Earth Surface</i> , 2014, 119, 1783-1799.	2.8	35
47	Snow mechanics and avalanche formation: field experiments on the dynamic response of the snow cover. <i>Surveys in Geophysics</i> , 1995, 16, 621-633.	4.6	34
48	Snowpack tests for assessing snow-slope instability. <i>Annals of Glaciology</i> , 2010, 51, 187-194.	1.4	34
49	Fracture toughness of snow in shear and tension. <i>Scripta Materialia</i> , 2002, 46, 425-429.	5.2	33
50	Influence of snowpack layering on human-triggered snow slab avalanche release. <i>Cold Regions Science and Technology</i> , 2008, 54, 176-182.	3.5	33
51	On forecasting wet-snow avalanche activity using simulated snow cover data. <i>Cold Regions Science and Technology</i> , 2017, 144, 28-38.	3.5	33
52	Snow Water Equivalent of Dry Snow Derived From GNSS Carrier Phases. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2018, 56, 3561-3572.	6.3	33
53	The influence of the layered character of snow cover on the triggering of slab avalanches. <i>Annals of Glaciology</i> , 1993, 18, 193-198.	1.4	31
54	Skier triggering, snow temperatures and the stability index for dry-slab avalanche initiation. <i>Journal of Glaciology</i> , 1999, 45, 190-200.	2.2	31

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55	Describing Snow Instability by Failure Initiation, Crack Propagation, and Slab Tensile Support. <i>Geophysical Research Letters</i> , 2018, 45, 7019-7027.	4.0	31
56	On the relation between avalanche occurrence and avalanche danger level. <i>Cryosphere</i> , 2020, 14, 737-750.	3.9	31
57	Measuring and localizing acoustic emission events in snow prior to fracture. <i>Cold Regions Science and Technology</i> , 2015, 110, 160-169.	3.5	29
58	Field observations on spatial variability of surface hoar at the basin scale. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	27
59	Upward-looking L-band FMCW radar for snow cover monitoring. <i>Cold Regions Science and Technology</i> , 2014, 103, 31-40.	3.5	27
60	Effects of Climate Change on Avalanche Accidents and Survival. <i>Frontiers in Physiology</i> , 2021, 12, 639433.	2.8	27
61	Effects of snow properties on humans breathing into an artificial air pocket “ an experimental field study. <i>Scientific Reports</i> , 2017, 7, 17675.	3.3	26
62	Snow cover spatial variability at multiple scales: Characteristics of a layer of buried surface hoar. <i>Cold Regions Science and Technology</i> , 2007, 47, 207-223.	3.5	25
63	Snowpack observations and fracture concepts for skier-triggering of dry-snow slab avalanches. <i>Cold Regions Science and Technology</i> , 2008, 51, 112-121.	3.5	25
64	Spatial characteristics of avalanche activity in an Alpine valley “ a GIS approach. <i>Annals of Glaciology</i> , 1998, 26, 329-336.	1.4	24
65	Field observations for estimating the local avalanche danger in the Columbia Mountains of Canada. <i>Cold Regions Science and Technology</i> , 2009, 58, 84-91.	3.5	24
66	On using local avalanche danger level estimates for regional forecast verification. <i>Cold Regions Science and Technology</i> , 2017, 144, 52-62.	3.5	24
67	Snow instability evaluation: calculating the skier-induced stress in a multi-layered snowpack. <i>Natural Hazards and Earth System Sciences</i> , 2016, 16, 775-788.	3.6	23
68	Automatic detection of snow avalanches in continuous seismic data using hidden Markov models. <i>Natural Hazards and Earth System Sciences</i> , 2018, 18, 383-396.	3.6	23
69	Load-controlled test apparatus for snow. <i>Cold Regions Science and Technology</i> , 2010, 62, 119-125.	3.5	22
70	Measuring spatial variations of weak layer and slab properties with regard to snow slope stability. <i>Cold Regions Science and Technology</i> , 2011, 65, 234-241.	3.5	22
71	Influence of weak layer heterogeneity and slab properties on slab tensile failure propensity and avalanche release area. <i>Cryosphere</i> , 2015, 9, 795-804.	3.9	22
72	Fracture toughness of dry snow slab avalanches from field measurements. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	20

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73	Stability algorithm for snow micro-penetrometer measurements. <i>Journal of Glaciology</i> , 2009, 55, 805-813.	2.2	20
74	Comparison of snow stability tests: Extended column test, rutschblock test and compression test. <i>Cold Regions Science and Technology</i> , 2009, 59, 217-226.	3.5	20
75	Weak layer fracture: facets and depth hoar. <i>Cryosphere</i> , 2013, 7, 1447-1453.	3.9	20
76	Temporal evolution of crack propagation propensity in snow in relation to slab and weak layer properties. <i>Cryosphere</i> , 2016, 10, 2637-2653.	3.9	20
77	Fracture toughness of snow in shear under friction. <i>Physical Review E</i> , 2002, 66, 027103.	2.1	19
78	The effect of surface warming on slab stiffness and the fracture behavior of snow. <i>Cold Regions Science and Technology</i> , 2012, 83-84, 30-36.	3.5	19
79	Forecasting snow avalanches using avalanche activity data obtained through seismic monitoring. <i>Cold Regions Science and Technology</i> , 2016, 132, 68-80.	3.5	19
80	Inversion of airborne geophysics over the DO-27/DO-18 kimberlites " Part 1: Potential fields. <i>Interpretation</i> , 2017, 5, T299-T311.	1.1	19
81	On size and shape effects in snow fracture toughness measurements. <i>Cold Regions Science and Technology</i> , 2005, 43, 24-35.	3.5	18
82	Comparison of micro-structural snowpack parameters derived from penetration resistance measurements with fracture character observations from compression tests. <i>Cold Regions Science and Technology</i> , 2009, 59, 193-201.	3.5	18
83	Automatically Detecting Avalanche Events in Passive Seismic Data. , 2012, , .		18
84	Hypoxia and hypercapnia effects on cerebral oxygen saturation in avalanche burial: A pilot human experimental study. <i>Resuscitation</i> , 2021, 158, 175-182.	3.0	18
85	Review and future challenges in snow avalanche risk analysis. , 0, , 49-62.		17
86	Comparing measurements of snow mechanical properties relevant for slab avalanche release. <i>Journal of Glaciology</i> , 2019, 65, 55-67.	2.2	17
87	Evaluating the performance of an operational infrasound avalanche detection system at three locations in the Swiss Alps during two winter seasons. <i>Cold Regions Science and Technology</i> , 2020, 173, 102962.	3.5	17
88	The influence of the layered character of snow cover on the triggering of slab avalanches. <i>Annals of Glaciology</i> , 1993, 18, 193-198.	1.4	16
89	Hardness estimation and weak layer detection in simulated snow stratigraphy. <i>Cold Regions Science and Technology</i> , 2014, 103, 82-90.	3.5	16
90	Snow instability patterns at the scale of a small basin. <i>Journal of Geophysical Research F: Earth Surface</i> , 2016, 121, 257-282.	2.8	16

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91	Micromechanical modeling of snow failure. <i>Cryosphere</i> , 2020, 14, 39-49.	3.9	16
92	On the importance of snowpack stability, the frequency distribution of snowpack stability, and avalanche size in assessing the avalanche danger level. <i>Cryosphere</i> , 2020, 14, 3503-3521.	3.9	16
93	The temperature dependence of the effective elastic shear modulus of snow. <i>Cold Regions Science and Technology</i> , 2002, 35, 55-64.	3.5	15
94	The energy release rate of mode II fractures in layered snow samples. <i>International Journal of Fracture</i> , 2006, 139, 461-475.	2.2	15
95	Laboratory experiments on shear failure of snow. <i>Annals of Glaciology</i> , 1998, 26, 97-102.	1.4	14
96	Field measurements of sintering after fracture of snowpack weak layers. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	14
97	Statistical evaluation of local to regional snowpack stability using simulated snow-cover data. <i>Cold Regions Science and Technology</i> , 2010, 64, 110-118.	3.5	14
98	A new method for visualizing snow stability profiles. <i>Cold Regions Science and Technology</i> , 2012, 78, 64-72.	3.5	14
99	Relating simple drivers to snow instability. <i>Cold Regions Science and Technology</i> , 2015, 120, 168-178.	3.5	14
100	Snow avalanches. , 2021, , 377-416.		14
101	Spatial characteristics of avalanche activity in an Alpine valley " a GIS approach. <i>Annals of Glaciology</i> , 1998, 26, 329-336.	1.4	13
102	Snowpack stability information derived from the SnowMicroPen signal. <i>Cold Regions Science and Technology</i> , 2007, 47, 102-107.	3.5	13
103	Automatic detection of avalanches combining array classification and localization. <i>Earth Surface Dynamics</i> , 2019, 7, 491-503.	2.4	13
104	Validating modeled critical crack length for crack propagation in the snow cover model SNOWPACK. <i>Cryosphere</i> , 2019, 13, 3353-3366.	3.9	13
105	Optimization of the Drabkin monochromator. <i>Nuclear Instruments & Methods</i> , 1979, 158, 395-397.	1.2	12
106	Testing the performance of avalanche transceivers. <i>Cold Regions Science and Technology</i> , 2003, 37, 429-438.	3.5	12
107	Localization of seismic events produced by avalanches using multiple signal classification. <i>Geophysical Journal International</i> , 2018, , .	2.4	12
108	Acoustic emission signatures prior to snow failure. <i>Journal of Glaciology</i> , 2018, 64, 543-554.	2.2	12

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109	Fiber-bundle model with time-dependent healing mechanisms to simulate progressive failure of snow. <i>Physical Review E</i> , 2018, 98, 023002.	2.1	12
110	Micro-mechanical insights into the dynamics of crack propagation in snow fracture experiments. <i>Scientific Reports</i> , 2021, 11, 11711.	3.3	12
111	A new index combining weak layer and slab properties for snow instability prediction. <i>Natural Hazards and Earth System Sciences</i> , 2015, 15, 109-118.	3.6	11
112	Prevention of Hypothermia in the Aftermath of Natural Disasters in Areas at Risk of Avalanches, Earthquakes, Tsunamis and Floods. <i>International Journal of Environmental Research and Public Health</i> , 2022, 19, 1098.	2.6	11
113	Data-driven automated predictions of the avalanche danger level for dry-snow conditions in Switzerland. <i>Natural Hazards and Earth System Sciences</i> , 2022, 22, 2031-2056.	3.6	11
114	Effects of surface warming of a dry snowpack. <i>Cold Regions Science and Technology</i> , 1999, 30, 59-65.	3.5	10
115	Stress Concentrations in Weak Snowpack Layers and Conditions for Slab Avalanche Release. <i>Geophysical Research Letters</i> , 2018, 45, 8363-8369.	4.0	10
116	Studying Snow Failure With Fiber Bundle Models. <i>Frontiers in Physics</i> , 2020, 8, .	2.1	10
117	Avalanche danger level characteristics from field observations of snow instability. <i>Cryosphere</i> , 2021, 15, 3293-3315.	3.9	10
118	A concept for optimizing avalanche rescue strategies using a Monte Carlo simulation approach. <i>PLoS ONE</i> , 2017, 12, e0175877.	2.5	10
119	A synthetic study to assess the applicability of full-waveform inversion to infer snow stratigraphy from upward-looking ground-penetrating radar data. <i>Geophysics</i> , 2016, 81, WA213-WA223.	2.6	9
120	On snow stability interpretation of extended column test results. <i>Natural Hazards and Earth System Sciences</i> , 2020, 20, 1941-1953.	3.6	9
121	Avalanche forecasting "an expert system approach. <i>Journal of Glaciology</i> , 1996, 42, 318-332.	2.2	9
122	Skier triggering, snow temperatures and the stability index for dry-slab avalanche initiation. <i>Journal of Glaciology</i> , 1999, 45, 190-200.	2.2	8
123	Effect of mountain permafrost on snowpack stability. <i>Cold Regions Science and Technology</i> , 2007, 47, 43-49.	3.5	8
124	Variations in snow surface properties at the snowpack-depth, the slope and the basin scale. <i>Journal of Glaciology</i> , 2008, 54, 846-856.	2.2	8
125	Dynamic crack propagation in weak snowpack layers: insights from high-resolution, high-speed photography. <i>Cryosphere</i> , 2021, 15, 3539-3553.	3.9	8
126	Sensitivity of modeled snow stability data to meteorological input uncertainty. <i>Natural Hazards and Earth System Sciences</i> , 2020, 20, 2873-2888.	3.6	8

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127	GNSS signal-based snow water equivalent determination for different snowpack conditions along a steep elevation gradient. <i>Cryosphere</i> , 2022, 16, 505-531.	3.9	8
128	Using stability tests and regional avalanche danger to estimate the local avalanche danger. <i>Annals of Glaciology</i> , 2010, 51, 176-186.	1.4	7
129	Modeling spatially distributed snow instability at a regional scale using Alpine3D. <i>Journal of Glaciology</i> , 2021, 67, 1147-1162.	2.2	7
130	Snow Avalanches. , 2015, , 395-436.		6
131	A Hybrid Expert System for Avalanche Forecasting. , 1994, , 148-153.		6
132	Crack propagation speeds in weak snowpack layers. <i>Journal of Glaciology</i> , 2022, 68, 557-570.	2.2	6
133	Field measurements of snowpack response to explosive loading. <i>Cold Regions Science and Technology</i> , 2015, 120, 179-190.	3.5	5
134	Modeling Snow Failure Behavior and Concurrent Acoustic Emissions Signatures With a Fiber Bundle Model. <i>Geophysical Research Letters</i> , 2019, 46, 6653-6662.	4.0	5
135	Survival chance optimized search strip width in avalanche rescue. <i>Cold Regions Science and Technology</i> , 2009, 59, 259-266.	3.5	4
136	On stability sampling strategy at the slope scale. <i>Cold Regions Science and Technology</i> , 2010, 64, 104-109.	3.5	4
137	Snowpack response to directed gas explosions on level ground. <i>Cold Regions Science and Technology</i> , 2017, 144, 73-88.	3.5	4
138	The role of bed separation and friction in sliding over an undeformable bed. <i>Journal of Glaciology</i> , 1992, 38, 77-92.	2.2	2
139	Applied snow and avalanche research. <i>Cold Regions Science and Technology</i> , 2010, 64, 69-72.	3.5	2
140	Assessing Approaches for Determination of Liquid Water in Snow. <i>Eos</i> , 2014, 95, 328-328.	0.1	1
141	Title is missing!. <i>Cold Regions Science and Technology</i> , 2007, 49, 1.	3.5	0
142	The Influence of Snow Density on O2 and CO2 Levels in Subjects Breathing into an Artificial Airpocket. <i>Wilderness and Environmental Medicine</i> , 2016, 27, 428.	0.9	0