Nicolas Eckert

List of Publications by Year
in descending order

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112 papers	3,788 citations	147726 31 h-index	149623 56 g-index
122 all docs	122 docs citations	122 times ranked	3618 citing authors

#	Article	IF	Citations
1	Global glacier mass changes and their contributions to sea-level rise from 1961 to 2016. Nature, 2019, 568, 382-386.	13.7	627
2	The European mountain cryosphere: aÂreview of its current state, trends, and future challenges. Cryosphere, 2018, 12, 759-794.	1.5	382
3	Glaciological and volumetric mass-balance measurements: error analysis over 51 years for Glacier de Sarennes, French Alps. Journal of Glaciology, 2008, 54, 522-532.	1.1	157
4	Climate response to the Samalas volcanic eruption in 1257 revealed by proxy records. Nature Geoscience, 2017, 10, 123-128.	5.4	130
5	Climate warming enhances snow avalanche risk in the Western Himalayas. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 3410-3415.	3.3	124
6	Changes in glacier equilibrium-line altitude in the western Alps from 1984 to 2010: evaluation by remote sensing and modeling of the morpho-topographic and climate controls. Cryosphere, 2013, 7, 1455-1471.	1.5	115
7	Projected changes of snow conditions and avalanche activity in a warming climate: the French Alps over the 2020â€"2050 and 2070â€"2100 periods. Cryosphere, 2014, 8, 1673-1697.	1.5	88
8	A spatio-temporal modelling framework for assessing the fluctuations of avalanche occurrence resulting from climate change: application to 60Âyears of data in the northern French Alps. Climatic Change, 2010, 101, 515-553.	1.7	65
9	Temporal trends in avalanche activity in the French Alps and subregions: from occurrences and runout altitudes to unsteady return periods. Journal of Glaciology, 2013, 59, 93-114.	1.1	65
10	Multi-component ensembles of future meteorological and natural snow conditions for 1500â€‰m altitude in the Chartreuse mountain range, Northern French Alps. Cryosphere, 2018, 12, 1249-1271.	1.5	59
11	Dense avalanche friction coefficients: influence of physical properties of snow. Journal of Glaciology, 2013, 59, 771-782.	1.1	57
12	Snow and weather climatic control on snow avalanche occurrence fluctuations over 50 yr in the French Alps. Climate of the Past, 2012, 8, 855-875.	1.3	54
13	Assessing the Response of Snow Avalanche Runout Altitudes to Climate Fluctuations Using Hierarchical Modeling: Application to 61 Winters of Data in France. Journal of Climate, 2010, 23, 3157-3180.	1.2	53
14	Mapping extreme snowfalls in the French Alps using maxâ€stable processes. Water Resources Research, 2013, 49, 1079-1098.	1.7	53
15	Climatic drivers of seasonal glacier mass balances: an analysis of 6 decades at Glacier de Sarennes (French Alps). Cryosphere, 2013, 7, 47-66.	1.5	52
16	Climate controls on snow reliability in French Alps ski resorts. Scientific Reports, 2019, 9, 8043.	1.6	52
17	Long-term avalanche hazard assessment with a Bayesian depth-averaged propagation model. Journal of Glaciology, 2010, 56, 563-586.	1.1	51
18	Bayesian stochastic modelling for avalanche predetermination: from a general system framework to return period computations. Stochastic Environmental Research and Risk Assessment, 2008, 22, 185-206.	1.9	50

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19	Rainfall control of debris-flow triggering in the RÃ©al Torrent, Southern French Prealps. Geomorphology, 2017, 291, 17-32.	1.1	49
20	Revisiting statisticalâ€“topographical methods for avalanche predetermination: Bayesian modelling for runout distance predictive distribution. Cold Regions Science and Technology, 2007, 49, 88-107.	1.6	45
21	The effects of kinetic sorting on sediment mobility on steep slopes. Earth Surface Processes and Landforms, 2014, 39, 1075-1086.	1.2	44
22	Hierarchical Bayesian modelling for spatial analysis of the number of avalanche occurrences at the scale of the township. Cold Regions Science and Technology, 2007, 50, 97-112.	1.6	41
23	Bayesian optimal design of an avalanche dam using a multivariate numerical avalanche model. Stochastic Environmental Research and Risk Assessment, 2009, 23, 1123-1141.	1.9	41
24	Validation of extreme snow avalanches and related return periods derived from a statistical-dynamical model using tree-ring techniques. Cold Regions Science and Technology, 2014, 99, 12-26.	1.6	38
25	Assessing the effects of earlier snow melt-out on alpine shrub growth: The sooner the better?. Ecological Indicators, 2020, 115, 106455.	2.6	38
26	Influence of weak-layer heterogeneity on snow slab avalanche release: application to the evaluation of avalanche release depths. Journal of Glaciology, 2013, 59, 423-437.	1.1	37
27	Impacts of land-use and land-cover changes on rockfall propagation: Insights from the Grenoble conurbation. Science of the Total Environment, 2016, 547, 345-355.	3.9	36
28	Causes of Glacier Melt Extremes in the Alps Since 1949. Geophysical Research Letters, 2018, 45, 817-825.	1.5	36
29	Partitioning Uncertainty Components of an Incomplete Ensemble of Climate Projections Using Data Augmentation. Journal of Climate, 2019, 32, 2423-2440.	1.2	36
30	Return period calculation and passive structure design at the Taconnaz avalanche path, France. Annals of Glaciology, 2010, 51, 89-97.	2.8	35
31	Quantitative risk and optimal design approaches in the snow avalanche field: Review and extensions. Cold Regions Science and Technology, 2012, 79-80, 1-19.	1.6	35
32	Evaluation of slope stability with respect to snowpack spatial variability. Journal of Geophysical Research F: Earth Surface, 2014, 119, 1783-1799.	1.0	35
33	Cross-comparison of meteorological and avalanche data for characterising avalanche cycles: The example of December 2008 in the eastern part of the French Alps. Cold Regions Science and Technology, 2010, 64, 119-136.	1.6	34
34	Modeling rockfall frequency and bounce height from three-dimensional simulation process models and growth disturbances in submontane broadleaved trees. Geomorphology, 2017, 281, 66-77.	1.1	34
35	Decreasing spatial dependence in extreme snowfall in the French Alps since 1958 under climate change. Journal of Geophysical Research D: Atmospheres, 2016, 121, 8297-8310.	1.2	30
36	Optimal design under uncertainty of a passive defense structure against snow avalanches: from a general Bayesian framework to a simple analytical model. Natural Hazards and Earth System Sciences, 2008, 8, 1067-1081.	1.5	29

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37	Adding Expert Contributions to the Spatiotemporal Modelling of Avalanche Activity Under Different Climatic Influences. Journal of the Royal Statistical Society Series C: Applied Statistics, 2015, 64, 651-671.	0.5	29
38	Has fire policy decreased the return period of the largest wildfire events in France? A Bayesian assessment based on extreme value theory. Natural Hazards and Earth System Sciences, 2018, 18, 2641-2651.	1.5	29
39	Relative influence of mechanical and meteorological factors on avalanche release depth distributions: An application to French Alps. Geophysical Research Letters, 2012, 39, .	1.5	28
40	Extracting the temporal signal from a winter and summer mass-balance series: application to a six-decade record at Glacier de Sarennes, French Alps. Journal of Glaciology, 2011, 57, 134-150.	1.1	27
41	A 240-year history of avalanche risk in the Vosges Mountains based on non-conventional (re)sources. Natural Hazards and Earth System Sciences, 2017, 17, 887-904.	1.5	27
42	Upslope migration of snow avalanches in a warming climate. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	27
43	A New Tree-Ring-Based, Semi-Quantitative Approach for the Determination of Snow Avalanche Events: use of Classification Trees for Validation. Arctic, Antarctic, and Alpine Research, 2013, 45, 383-395.	0.4	26
44	A new web-based system to improve the monitoring of snow avalanche hazard in France. Natural Hazards and Earth System Sciences, 2016, 16, 1205-1216.	1.5	26
45	Bayesian stochastic modeling of a spherical rock bouncing on a coarse soil. Natural Hazards and Earth System Sciences, 2009, 9, 831-846.	1.5	25
46	A new hierarchical Bayesian approach to analyse environmental and climatic influences on debris flow occurrence. Geomorphology, 2015, 250, 407-421.	1.1	23
47	How is rockfall risk impacted by land-use and land-cover changes? Insights from the French Alps. Global and Planetary Change, 2019, 174, 138-152.	1.6	23
48	Influence of weak layer heterogeneity and slab properties on slab tensile failure propensity and avalanche release area. Cryosphere, 2015, 9, 795-804.	1.5	22
49	Can we infer avalancheâ€"climate relations using tree-ring data? Case studies in the French Alps. Regional Environmental Change, 2016, 16, 629-642.	1.4	22
50	A model for spatioâ€temporal clustering using multinomial probit regression: application to avalanche counts. Environmetrics, 2012, 23, 522-534.	0.6	21
51	Impacts of land-cover changes on snow avalanche activity in the French Alps. Anthropocene, 2020, 30, 100244.	1.6	21
52	Non-stationary extreme value analysis of ground snow loads in the French Alps: a comparison with building standards. Natural Hazards and Earth System Sciences, 2020, 20, 2961-2977.	1.5	20
53	Disentangling the impacts of exogenous disturbances on forest stands to assess multi-centennial tree-ring reconstructions of avalanche activity in the upper Goms Valley (Canton of Valais,) Tj ETQq1 1 0.784314 rg BT /Overlock 10 Tf	0.6	19
54	A reliability assessment of physical vulnerability of reinforced concrete walls loaded by snow avalanches. Natural Hazards and Earth System Sciences, 2014, 14, 689-704.	1.5	18

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55	Sensitivity of avalanche risk to vulnerability relations. Cold Regions Science and Technology, 2014, 108, 163-177.	1.6	18
56	Physical and societal statistics for a century of snow-avalanche hazards on Sakhalin and the Kuril Islands (1910â€“2010). Journal of Glaciology, 2014, 60, 409-430.	1.1	18
57	Impact du rÃ©chauffement climatiqueÂsur l'activitÃ© avalancheuse et multiplication des avalanches humides dans les Alpes franÃ§aises. Houille Blanche, 2016, 102, 12-20.	0.3	18
58	Avalanche risk evaluation and protective dam optimal design using extreme value statistics. Journal of Glaciology, 2016, 62, 725-749.	1.1	18
59	Spatio-temporal maps of past avalanche events derived from tree-ring analysis: A case study in the Zermatt valley (Valais, Switzerland). Cold Regions Science and Technology, 2018, 154, 9-22.	1.6	18
60	One and a half century of avalanche risk to settlements in the upper Maurienne valley inferred from land cover and socio-environmental changes.. Global Environmental Change, 2020, 65, 102149.	3.6	18
61	Combining random forests and class-balancing to discriminate between three classes of avalanche activity in the French Alps. Cold Regions Science and Technology, 2021, 187, 103276.	1.6	17
62	Assessment of the recurrence intervals of rockfall through dendrogeomorphology and counting scar approach: A comparative study in a mixed forest stand from the Vercors massif (French Alps). Geomorphology, 2019, 340, 160-171.	1.1	16
63	Elevation-dependent trends in extreme snowfall in the French Alps from 1959 to 2019. Cryosphere, 2021, 15, 4335-4356.	1.5	16
64	Repenser les fondements du zonage rÃ¨glementaire des risques en montagne Â«ÂrÃ©currentsÂÂ». Houille Blanche, 2018, 104, 38-67.	0.3	14
65	Respective influence of geomorphologic and climate conditions on debris-flow occurrence in the Northern French Alps. Landslides, 2019, 16, 1871-1883.	2.7	13
66	Changements climatiques et risques naturels dans les Alpes. Revue De Geographie Alpine, 2015, , .	0.1	13
67	La construction du risque au prisme territorialâ€‰: dans l'ombre de l'archÃ©type alpin, les avalanches oubliÃ©es de moyenne montagne. Natures Sciences Societes, 2017, 25, 148-162.	0.1	12
68	Spatio-temporal variability of avalanche risk in the French Alps. Regional Environmental Change, 2022, 22, 1.	1.4	12
69	Avalanche activity and socio-environmental changes leave strong footprints in forested landscapes: a case study in the Vosges medium-high mountain range. Annals of Glaciology, 2018, 59, 111-133.	2.8	11
70	Ã‰valuation quantitative du risque chutes de blocs: lâ€™exemple de la commune de Crolles (Massif de la) Tj ETQq0 0 0 rgBT /Overlock	0.7	11
71	Climate change and natural hazards in the Alps. Revue De Geographie Alpine, 2015, , .	0.1	11
72	Assessing Climate Change Impact on the Spatial Dependence of Extreme Snow Depth Maxima in the French Alps. Water Resources Research, 2018, 54, 7820-7840.	1.7	10

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73	Improving the understanding of flood risk in the Alsatian region by knowledge capitalization: the ORRION participative observatory. Natural Hazards and Earth System Sciences, 2019, 19, 1653-1683.	1.5	10
74	Tree-ring reconstruction of snow avalanche activity: Does avalanche path selection matter?. Science of the Total Environment, 2019, 684, 496-508.	3.9	10
75	Dating of rockfall damage in trees yields insights into meteorological triggers of process activity in the French Alps. Earth Surface Processes and Landforms, 2020, 45, 2235-2250.	1.2	10
76	A limiting distribution for maxima of discrete stationary triangular arrays with an application to risk due to avalanches. Extremes, 2016, 19, 25-40.	0.5	9
77	A multi-criteria leave-two-out cross-validation procedure for max-stable process selection. Spatial Statistics, 2017, 22, 107-128.	0.9	9
78	Using spatial and spatial-extreme statistics to characterize snow avalanche cycles. Procedia Environmental Sciences, 2011, 7, 224-229.	1.3	8
79	Quantile-based individual risk measures for rockfall-prone areas. International Journal of Disaster Risk Reduction, 2021, 53, 101932.	1.8	8
80	Nonparametric estimation of aggregated Sobolâ€™ indices: Application to a depth averaged snow avalanche model. Reliability Engineering and System Safety, 2021, 212, 107422.	5.1	8
81	Force fluctuations on a wall in interaction with a granular lid-driven cavity flow. Physical Review E, 2017, 96, 042906.	0.8	7
82	Modelling the spatio-temporal repartition of right-truncated data: an application to avalanche runout altitudes in Hautes-Savoie. Stochastic Environmental Research and Risk Assessment, 2017, 31, 629-644.	1.9	7
83	Bayesian calibration of an avalanche model from autocorrelated measurements along the flow: application to velocities extracted from photogrammetric images. Journal of Glaciology, 2020, 66, 373-385.	1.1	7
84	Le risque avalanche sur le rÃ©seau routier alpin franÃ§ais. Revue De Geographie Alpine, 2014, , .	0.1	7
85	Improved tree-ring sampling strategy enhances the detection of key meteorological drivers of rockfall activity. Catena, 2021, 201, 105179.	2.2	6
86	Une mÃ©thodologie de la modÃ©lisation en gÃ©ohistoireÂ: de la chronologie (spatialisÃ©e) des Ã©vÃ©nements au fonctionnement du systÃ¨me par la mise en correspondance spatiale et temporelle. Physio-GÃ©o, 2019, , 171-199.	0.5	5
87	Comparing numerical and experimental approaches for the stochastic modeling of the bouncing of a boulder on a coarse soil. European Journal of Environmental and Civil Engineering, 2010, 14, 87-111.	1.0	4
88	Inferring Spatio-temporal Patterns in Extreme Snowfall in the French Alps Using Max-stable Processes. Procedia Environmental Sciences, 2015, 26, 24-31.	1.3	4
89	Extreme avalanche cycles: Return levels and probability distributions depending on snow and meteorological conditions. Weather and Climate Extremes, 2021, 33, 100344.	1.6	4
90	Assessing fragility of a reinforced concrete element to snow avalanches using a non-linear dynamic mass-spring model. Natural Hazards and Earth System Sciences, 2018, 18, 2507-2524.	1.5	3

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91	Refining the processing of paired time series data to improve velocity estimation in snow flows. Cold Regions Science and Technology, 2018, 151, 75-88.	1.6	3
92	The snow avalanches risk on Alpine roads network. Revue De Geographie Alpine, 2014, , .	0.1	3
93	Brief communication: Weak control of snow avalanche deposit volumes by avalanche path morphology. Cryosphere, 2021, 15, 4845-4852.	1.5	3
94	Estimating rockfall release frequency from blocks deposited in protection barriers, growth disturbances in trees, and trajectory simulations. Landslides, 2022, 19, 7-18.	2.7	3
95	Les discours mÃ©diatiques favorisent-ils lâ€™Ã©mergence du risqueÂdâ€™avalanche en moyenne montagneÂ? Lâ€™exemple du Massif vosgienÂ: entre ignorance et minimisation. Revue De Geographie Alpine, 2017, , .	0.1	3
96	Global sensitivity analysis with aggregated Shapley effects, application to avalanche hazard assessment. Reliability Engineering and System Safety, 2022, 222, 108420.	5.1	3
97	Modelling snowpack stability from simulated snow stratigraphy: Summary and implementation examples. Cold Regions Science and Technology, 2022, , 103596.	1.6	3
98	Une base de donnÃ©es Ã©vÃ©nementielle du risque rocheux dans les Alpes FranÃ§aises. Revue FranÃ§aise De GÃ©otechnique, 2020, , 3.	0.1	2
99	PrÃ©dÃ©termination des hauteurs de dÃ©part d'avalanchesÂ: une approche par extrÃªmes spatiaux. Houille Blanche, 2013, , 30-36.	0.3	2
100	Traiter l'incertitude des projections climatiques (essai). Schweizerische Zeitschrift Fur Forstwesen, 2018, 169, 203-209.	0.5	2
101	VariabilitÃ© des volumes des dÃ©pÃ´ts dâ€™avalanche et relations avec la morphologie des couloirs dâ€™Ã©coulement (Bessans, Savoie, France). Geomorphologie Relief, Processus, Environnement, 2020, 26, 127-140.	0.7	2
102	Ã‰valuation quantitative du risque rocheuxâ€‰: de la formalisation Ã lâ€™application sur les zones urbanisÃ©es ou urbanisables. Revue FranÃ§aise De GÃ©otechnique, 2020, , 7.	0.1	2
103	A framework to account for structural damage, functional efficiency and reparation costs within the optimal design of countermeasures: Application to snow avalanche risk mitigation. Cold Regions Science and Technology, 2022, 199, 103559.	1.6	2
104	Limited impacts of global warming on rockfall activity at low elevations: Insights from two calcareous cliffs from the French Prealps. Progress in Physical Geography, 0, , 030913332211076.	1.4	2
105	Inferring Spatio-temporal Patterns in Extreme Snowfall in the French Alps Using Max-stable Processes. Procedia Environmental Sciences, 2015, 27, 75-82.	1.3	1
106	Une mÃ©thode statistique-topographique de prÃ©dÃ©termination des distances dâ€™arrÃªt des avalanches. Houille Blanche, 2006, 92, 120-127.	0.3	1
107	Couplage donnÃ©es historiques - modÃ©lisation numÃ©rique pour la prÃ©dÃ©termination des avalanches : une approche bayÃ©sienne. Houille Blanche, 2009, 95, 174-182.	0.3	1
108	A non-stationary extreme-value approach for climate projection ensembles: application to snow loads in the French Alps. Earth System Dynamics, 2022, 13, 1059-1075.	2.7	1

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109	Spatio-temporal modeling of avalanche frequencies in the French Alps. Procedia Environmental Sciences, 2011, 7, 311-316.	1.3	0
110	Does Media Discourse Favour the Emergence of Avalanche Risk in Medium-High Mountain Regions? Between Ignorance and Underestimation, the Example of the Vosges Mountains. Revue De Geographie Alpine, 2017, , .	0.1	0
111	InfÃ©rence et modÃ©lisation de la dÃ©pendance spatiale des extrÃªmes neigeux dans les Alpes franÃ§aises par processus max-stables. Houille Blanche, 2019, 105, 150-158.	0.3	0
112	Apports de la dendrogÃ©omorphologie pour la connaissance de lâ€™Ã©volution de lâ€™alÃ©a rocheux dans les PrÃ©alpes franÃ§aises calcaires. Revue FranÃ§aise De GÃ©otechnique, 2020, , 5.	0.1	0