

William E Dietrich

List of Publications by Year in descending order

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147
papers

24,626
citations

4960

84
h-index

10445

139
g-index

149
all docs

149
docs citations

149
times ranked

13009
citing authors

#	ARTICLE	IF	CITATIONS
1	Multicriteria analysis on rock moisture and streamflow in a rainfall-runoff model improves accuracy of model results. <i>Hydrological Processes</i> , 2022, 36, .	2.6	1
2	Orbital and In-situ Investigation of Periodic Bedrock Ridges in Glen Torridon, Gale Crater, Mars. <i>Journal of Geophysical Research E: Planets</i> , 2022, 127, .	3.6	18
3	Controls on the size distributions of shallow landslides. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	17
4	The Relationship Between Topography, Bedrock Weathering, and Water Storage Across a Sequence of Ridges and Valleys. <i>Journal of Geophysical Research F: Earth Surface</i> , 2021, 126, e2020JF005848.	2.8	13
5	Inverted channel variations identified on a distal portion of a bajada in the central Atacama Desert, Chile. <i>Geomorphology</i> , 2021, 393, 107925.	2.6	6
6	Chemical reactions, porosity, and microfracturing in shale during weathering: The effect of erosion rate. <i>Geochimica Et Cosmochimica Acta</i> , 2020, 269, 63-100.	3.9	68
7	Origin and composition of three heterolithic boulder- and cobble-bearing deposits overlying the Murray and Stimson formations, Gale Crater, Mars. <i>Icarus</i> , 2020, 350, 113897.	2.5	11
8	Lithologically Controlled Subsurface Critical Zone Thickness and Water Storage Capacity Determine Regional Plant Community Composition. <i>Water Resources Research</i> , 2019, 55, 3028-3055.	4.2	97
9	Direct observations of rock moisture, a hidden component of the hydrologic cycle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 2664-2669.	7.1	231
10	Controls on the distribution and resilience of <i>Quercus garryana</i> : ecophysiological evidence of oak's water-limitation tolerance. <i>Ecosphere</i> , 2018, 9, e02218.	2.2	25
11	Quantification of the seasonal hillslope water storage that does not drive streamflow. <i>Hydrological Processes</i> , 2018, 32, 1978-1992.	2.6	66
12	Controls on solute concentration-discharge relationships revealed by simultaneous hydrochemistry observations of hillslope runoff and stream flow: The importance of critical zone structure. <i>Water Resources Research</i> , 2017, 53, 1424-1443.	4.2	74
13	The frontier beneath our feet. <i>Water Resources Research</i> , 2017, 53, 2605-2609.	4.2	90
14	Seasonal shifts in the solute ion ratios of vadose zone rock moisture from the Eel River Critical Zone Observatory. <i>Acta Geochimica</i> , 2017, 36, 385-388.	1.7	13
15	Expanding the role of reactive transport models in critical zone processes. <i>Earth-Science Reviews</i> , 2017, 165, 280-301.	9.1	207
16	Sequence and relative timing of large lakes in Gale crater (Mars) after the formation of Mount Sharp. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 472-496.	3.6	72
17	Dynamic, structured heterogeneity of water isotopes inside hillslopes. <i>Water Resources Research</i> , 2016, 52, 164-189.	4.2	83
18	Effects of coarse grain size distribution and fine particle content on pore fluid pressure and shear behavior in experimental debris flows. <i>Journal of Geophysical Research F: Earth Surface</i> , 2016, 121, 415-441.	2.8	97

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19	Coevolution of bed surface patchiness and channel morphology: 1. Mechanisms of forced patch formation. <i>Journal of Geophysical Research F: Earth Surface</i> , 2015, 120, 1687-1707.	2.8	22
20	Coevolution of bed surface patchiness and channel morphology: 2. Numerical experiments. <i>Journal of Geophysical Research F: Earth Surface</i> , 2015, 120, 1708-1723.	2.8	15
21	Predicting shallow landslide size and location across a natural landscape: Application of a spectral clustering search algorithm. <i>Journal of Geophysical Research F: Earth Surface</i> , 2015, 120, 2552-2585.	2.8	28
22	The Landscape Evolution Observatory: A large-scale controllable infrastructure to study coupled Earth-surface processes. <i>Geomorphology</i> , 2015, 244, 190-203.	2.6	47
23	Hillslope soils and vegetation. <i>Geomorphology</i> , 2015, 234, 122-132.	2.6	94
24	A spectral clustering search algorithm for predicting shallow landslide size and location. <i>Journal of Geophysical Research F: Earth Surface</i> , 2015, 120, 300-324.	2.8	38
25	The origin and evolution of the Peace Vallis fan system that drains to the <i>Curiosity</i> landing area, Gale Crater, Mars. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 705-728.	3.6	112
26	A multidimensional stability model for predicting shallow landslide size and shape across landscapes. <i>Journal of Geophysical Research F: Earth Surface</i> , 2014, 119, 2481-2504.	2.8	98
27	A bottom-up control on fresh-bedrock topography under landscapes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 6576-6581.	7.1	205
28	Vegetation induced changes in the stable isotope composition of near surface humidity. <i>Ecohydrology</i> , 2014, 7, 936-949.	2.4	42
29	Delineation of river bed-surface patches by clustering high-resolution spatial grain size data. <i>Geomorphology</i> , 2014, 205, 102-119.	2.6	42
30	Howard Receives 2013 G. K. Gilbert Award: Citation. <i>Eos</i> , 2014, 95, 344-344.	0.1	0
31	Continental-scale relationship between bankfull width and drainage area for single-thread alluvial channels. <i>Water Resources Research</i> , 2014, 50, 919-936.	4.2	21
32	Influence of bed patchiness, slope, grain hiding, and form drag on gravel mobilization in very steep streams. <i>Journal of Geophysical Research F: Earth Surface</i> , 2013, 118, 982-1001.	2.8	48
33	Rain, rock moisture dynamics, and the rapid response of perched groundwater in weathered, fractured argillite underlying a steep hillslope. <i>Water Resources Research</i> , 2012, 48, .	4.2	124
34	Localized precipitation and runoff on Mars. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	31
35	Chaos terrain, storms, and past climate on Mars. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	13
36	Dietrich receives 2010 G. K. Gilbert Award: Response. <i>Eos</i> , 2011, 92, 205-205.	0.1	0

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37	The sensitivity of hillslope bedrock erosion to precipitation. <i>Earth Surface Processes and Landforms</i> , 2011, 36, 117-135.	2.5	89
38	A geometric framework for channel network extraction from lidar: Nonlinear diffusion and geodesic paths. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	183
39	William E. Dietrich Receives 2009 Robert E. Horton Medal. <i>Eos</i> , 2010, 91, 47-47.	0.1	0
40	Morphodynamics of subaqueous levee formation: Insights into river mouth morphologies arising from experiments. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	44
41	Bed topography and the development of forced bed surface patches. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	54
42	Influence of rock mass strength on the erosion rate of alpine cliffs. <i>Earth Surface Processes and Landforms</i> , 2009, 34, 1339-1352.	2.5	110
43	Formation of evenly spaced ridges and valleys. <i>Nature</i> , 2009, 460, 502-505.	27.8	237
44	Statistical description of slope-dependent soil transport and the diffusion-like coefficient. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	68
45	Managing reservoir sediment release in dam removal projects: An approach informed by physical and numerical modelling of non-cohesive sediment. <i>International Journal of River Basin Management</i> , 2009, 7, 433-452.	2.7	40
46	Instrumental record of debris flow initiation during natural rainfall: Implications for modeling slope stability. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	66
47	Response of bed surface patchiness to reductions in sediment supply. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	116
48	Translation and dispersion of sediment pulses in flume experiments simulating gravel augmentation below dams. <i>Water Resources Research</i> , 2009, 45, .	4.2	99
49	Turbulent characteristics of a shallow wall-bounded plane jet: experimental implications for river mouth hydrodynamics. <i>Journal of Fluid Mechanics</i> , 2009, 627, 423-449.	3.4	50
50	Implications of the saltation-abrasion bedrock incision model for steady-state river longitudinal profile relief and concavity. <i>Earth Surface Processes and Landforms</i> , 2008, 33, 1129-1151.	2.5	82
51	Unravelling the conundrum of river response to rising sea-level from laboratory to field. Part I: Laboratory experiments. <i>Sedimentology</i> , 2008, 55, 1643-1655.	3.1	41
52	Unravelling the conundrum of river response to rising sea-level from laboratory to field. Part II. The Fly-Strickland River system, Papua New Guinea. <i>Sedimentology</i> , 2008, 55, 1657-1686.	3.1	64
53	The depositional web on the floodplain of the Fly River, Papua New Guinea. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	82
54	Sediment load and floodplain deposition rates: Comparison of the Fly and Strickland rivers, Papua New Guinea. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	45

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55	Biogeochemical characterization of carbon sources in the Strickland and Fly rivers, Papua New Guinea. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	68
56	Response of the Strickland and Fly River confluence to postglacial sea level rise. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	19
57	Spatial and temporal dynamics of sediment accumulation and exchange along Strickland River floodplains (Papua New Guinea) over decadalâ€”centennial timescales. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	97
58	Sediment supply and relative size distribution effects on fine sediment infiltration into immobile gravels. <i>Water Resources Research</i> , 2008, 44, .	4.2	99
59	Experimental study of bedrock erosion by granular flows. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	51
60	Is the critical Shields stress for incipient sediment motion dependent on channelâ€”bed slope?. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	364
61	Spectral signatures of characteristic spatial scales and nonfractal structure in landscapes. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	153
62	A model for fluvial bedrock incision by impacting suspended and bed load sediment. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	186
63	Controls on the spacing of firstâ€”order valleys. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	182
64	Physicsâ€”based continuous simulation of longâ€”term nearâ€”surface hydrologic response for the Coos Bay experimental catchment. <i>Water Resources Research</i> , 2008, 44, .	4.2	85
65	Quantitative linkages among sediment supply, streambed fine sediment, and benthic macroinvertebrates in northern California streams. <i>Journal of the North American Benthological Society</i> , 2008, 27, 135-149.	3.1	31
66	Simulating Sediment Transport in a Flume with Forced Pool-Riffle Morphology: Examinations of Two One-Dimensional Numerical Models. <i>Journal of Hydraulic Engineering</i> , 2008, 134, 892-904.	1.5	19
67	SEASONAL REASSEMBLY OF A RIVER FOOD WEB: FLOODS, DROUGHTS, AND IMPACTS OF FISH. <i>Ecological Monographs</i> , 2008, 78, 263-282.	5.4	242
68	Integration of geochemical mass balance with sediment transport to calculate rates of soil chemical weathering and transport on hillslopes. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	112
69	Physical basis for quasiâ€”universal relations describing bankfull hydraulic geometry of singleâ€”thread gravel bed rivers. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	342
70	Channel network extraction from high resolution topography using wavelets. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	166
71	Upscaling river biomass using dimensional analysis and hydrogeomorphic scaling. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	7
72	Can springs cut canyons into rock?. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	153

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73	Toward a unified science of the Earth's surface: Opportunities for synthesis among hydrology, geomorphology, geochemistry, and ecology. <i>Water Resources Research</i> , 2006, 42, .	4.2	83
74	Do gravel bed river size distributions record channel network structure?. <i>Water Resources Research</i> , 2006, 42, .	4.2	67
75	Quantification of chemical weathering rates across an actively eroding hillslope. <i>Earth and Planetary Science Letters</i> , 2006, 242, 155-169.	4.4	90
76	Spatial patterns of soil organic carbon on hillslopes: Integrating geomorphic processes and the biological C cycle. <i>Geoderma</i> , 2006, 130, 47-65.	5.1	199
77	The role of sediment in controlling steady-state bedrock channel slope: Implications of the saltationâ€“abrasion incision model. <i>Geomorphology</i> , 2006, 82, 58-83.	2.6	173
78	The search for a topographic signature of life. <i>Nature</i> , 2006, 439, 411-418.	27.8	352
79	Dam Removal Express Assessment Models (DREAM). <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2006, 44, 308-323.	1.7	45
80	Dam Removal Express Assessment Models (DREAM).. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2006, 44, 291-307.	1.7	112
81	Tie channel sedimentation rates, oxbow formation age and channel migration rate from optically stimulated luminescence (OSL) analysis of floodplain deposits. <i>Earth Surface Processes and Landforms</i> , 2005, 30, 1161-1179.	2.5	96
82	Field measurements of incision rates following bedrock exposure: Implications for process controls on the long profiles of valleys cut by rivers and debris flows. <i>Bulletin of the Geological Society of America</i> , 2005, 117, 174.	3.3	130
83	Characterizing structural and lithologic controls on deep-seated landsliding: Implications for topographic relief and landscape evolution in the Oregon Coast Range, USA. <i>Bulletin of the Geological Society of America</i> , 2005, 117, 654.	3.3	120
84	Process-based model linking pocket gopher (<i>Thomomys bottae</i>) activity to sediment transport and soil thickness. <i>Geology</i> , 2005, 33, 917.	4.4	112
85	The illusion of diffusion: Field evidence for depth-dependent sediment transport. <i>Geology</i> , 2005, 33, 949.	4.4	154
86	Erosion of upland hillslope soil organic carbon: Coupling field measurements with a sediment transport model. <i>Global Biogeochemical Cycles</i> , 2005, 19, .	4.9	103
87	Contrasting effects of soil development on hydrological properties and flow paths. <i>Water Resources Research</i> , 2005, 41, .	4.2	103
88	A mechanistic model for river incision into bedrock by saltating bed load. <i>Water Resources Research</i> , 2004, 40, .	4.2	560
89	Reply to comment by Richard M. Iverson on â€œPiezometric response in shallow bedrock at CB1: Implications for runoff generation and landslidingâ€œ. <i>Water Resources Research</i> , 2004, 40, .	4.2	7
90	Shallow landsliding, root reinforcement, and the spatial distribution of trees in the Oregon Coast Range. <i>Canadian Geotechnical Journal</i> , 2003, 40, 237-253.	2.8	231

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91	Ice-driven creep on Martian debris slopes. <i>Geophysical Research Letters</i> , 2003, 30, .	4.0	28
92	Weathering profiles, mass-balance analysis, and rates of solute loss: Linkages between weathering and erosion in a small, steep catchment. <i>Bulletin of the Geological Society of America</i> , 2002, 114, 1143-1158.	3.3	367
93	Runoff generation in a steep, soil-mantled landscape. <i>Water Resources Research</i> , 2002, 38, 7-1-7-8.	4.2	101
94	Piezometric response in shallow bedrock at CB1: Implications for runoff generation and landsliding. <i>Water Resources Research</i> , 2002, 38, 10-1-10-18.	4.2	112
95	Hillslope evolution by nonlinear, slope-dependent transport: Steady state morphology and equilibrium adjustment timescales. <i>Journal of Geophysical Research</i> , 2001, 106, 16499-16513.	3.3	185
96	Late Quaternary erosion in southeastern Australia: a field example using cosmogenic nuclides. <i>Quaternary International</i> , 2001, 83-85, 169-185.	1.5	164
97	Sediment and rock strength controls on river incision into bedrock. <i>Geology</i> , 2001, 29, 1087.	4.4	633
98	Validation of the Shallow Landslide Model, SHALSTAB, for forest management. <i>Water Science and Application</i> , 2001, , 195-227.	0.3	91
99	Stochastic processes of soil production and transport: erosion rates, topographic variation and cosmogenic nuclides in the Oregon Coast Range. <i>Earth Surface Processes and Landforms</i> , 2001, 26, 531-552.	2.5	247
100	Hillslope evolution by nonlinear creep and landsliding: An experimental study. <i>Geology</i> , 2001, 29, 143.	4.4	164
101	Soil production on a retreating escarpment in southeastern Australia. <i>Geology</i> , 2000, 28, 787.	4.4	223
102	Forest clearing and regional landsliding. <i>Geology</i> , 2000, 28, 311.	4.4	267
103	Cosmogenic nuclides, topography, and the spatial variation of soil depth. <i>Geomorphology</i> , 1999, 27, 151-172.	2.6	290
104	Tidal networks: 1. Automatic network extraction and preliminary scaling features from digital terrain maps. <i>Water Resources Research</i> , 1999, 35, 3891-3904.	4.2	149
105	Tidal networks: 2. Watershed delineation and comparative network morphology. <i>Water Resources Research</i> , 1999, 35, 3905-3917.	4.2	171
106	Evidence for nonlinear, diffusive sediment transport on hillslopes and implications for landscape morphology. <i>Water Resources Research</i> , 1999, 35, 853-870.	4.2	553
107	Unsaturated zone processes and the hydrologic response of a steep, unchanneled catchment. <i>Water Resources Research</i> , 1998, 34, 1865-1879.	4.2	235
108	River longitudinal profiles and bedrock incision models: Stream power and the influence of sediment supply. <i>Geophysical Monograph Series</i> , 1998, , 237-260.	0.1	336

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109	Hillslopes, Channels, and Landscape Scale. , 1998, , 30-60.		17
110	The soil production function and landscape equilibrium. Nature, 1997, 388, 358-361.	27.8	767
111	Hillslope evolution by diffusive processes: The timescale for equilibrium adjustments. Water Resources Research, 1997, 33, 1307-1318.	4.2	228
112	Concentration-discharge relationships in runoff from a steep, unchanneled catchment. Water Resources Research, 1997, 33, 211-225.	4.2	131
113	Hydrologic response of a steep, unchanneled valley to natural and applied rainfall. Water Resources Research, 1997, 33, 91-109.	4.2	309
114	Cosmetic Isotope Analyses Applied to River Longitudinal Profile Evolution: Problems and Interpretations. Earth Surface Processes and Landforms, 1997, 22, 195-209.	2.5	53
115	Dams and downstream aquatic biodiversity: Potential food web consequences of hydrologic and geomorphic change. Environmental Management, 1996, 20, 887-895.	2.7	273
116	A process-based model for colluvial soil depth and shallow landsliding using digital elevation data. Hydrological Processes, 1995, 9, 383-400.	2.6	529
117	Geomorphological signatures of varying climate. Nature, 1995, 374, 632-635.	27.8	188
118	Flow resistance and sediment transport by concentrated overland flow in a grassland valley. Geomorphology, 1995, 13, 71-86.	2.6	167
119	Downstream Ecological Effects of Dams. BioScience, 1995, 45, 183-192.	4.9	650
120	Hydrologic Processes in a Low-Gradient Source Area. Water Resources Research, 1995, 31, 1-10.	4.2	66
121	Field Experiments on Erosion by Overland Flow and Their Implication for a Digital Terrain Model of Channel Initiation. Water Resources Research, 1995, 31, 2867-2876.	4.2	77
122	Hydraulic Food-Chain Models. BioScience, 1995, 45, 159-167.	4.9	281
123	Flow resistance and sediment transport by concentrated overland flow in a grassland valley. , 1995, , 71-86.		11
124	A physically based model for the topographic control on shallow landsliding. Water Resources Research, 1994, 30, 1153-1171.	4.2	1,206
125	Modeling fluvial erosion on regional to continental scales. Journal of Geophysical Research, 1994, 99, 13971-13986.	3.3	641
126	Quantification of soil production and downslope creep rates from cosmogenic ^{10}Be accumulations on a hillslope profile. Geology, 1993, 21, 343.	4.4	184

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127	Analysis of Erosion Thresholds, Channel Networks, and Landscape Morphology Using a Digital Terrain Model. <i>Journal of Geology</i> , 1993, 101, 259-278.	1.4	348
128	Erosion thresholds and land surface morphology. <i>Geology</i> , 1992, 20, 675.	4.4	237
129	Erosion rates in the southern oregon coast range: Evidence for an equilibrium between hillslope erosion and sediment yield. <i>Earth Surface Processes and Landforms</i> , 1991, 16, 307-322.	2.5	141
130	The variability of critical shear stress, friction angle, and grain protrusion in water-worked sediments. <i>Sedimentology</i> , 1990, 37, 647-672.	3.1	331
131	Hydrologic and erosional processes in hollows, Lone Tree Creek, Marin County, California. , 1989, , 74-89.		0
132	Trip log: Day 1 (July 1, 1989): Marin Headlands. , 1989, , 38-41.		0
133	Sediment supply and the development of the coarse surface layer in gravel-bedded rivers. <i>Nature</i> , 1989, 340, 215-217.	27.8	587
134	Source areas, drainage density, and channel initiation. <i>Water Resources Research</i> , 1989, 25, 1907-1918.	4.2	466
135	Boundary shear stress and sediment transport in river meanders of sand and gravel. <i>Water Resources Monograph</i> , 1989, , 1-50.	1.0	151
136	Analysis of Hillslope Erosion Rates Using Dated Colluvial Deposits. <i>Journal of Geology</i> , 1989, 97, 45-63.	1.4	69
137	Metal enrichment in bauxites by deposition of chemically mature aeolian dust. <i>Nature</i> , 1988, 333, 819-824.	27.8	182
138	Where do channels begin?. <i>Nature</i> , 1988, 336, 232-234.	27.8	535
139	Bedload sheets in heterogeneous sediment. <i>Geology</i> , 1988, 16, 105.	4.4	203
140	Bedload transport of fine gravel observed by motion-picture photography. <i>Journal of Fluid Mechanics</i> , 1988, 192, 193-217.	3.4	374
141	The importance of hollows in debris flow studies; Examples from Marin County, California. <i>Reviews in Engineering Geology</i> , 1987, , 165-180.	0.1	67
142	Constitutive mass balance relations between chemical composition, volume, density, porosity, and strain in metasomatic hydrochemical systems: Results on weathering and pedogenesis. <i>Geochimica Et Cosmochimica Acta</i> , 1987, 51, 567-587.	3.9	729
143	Geomorphic and paleoclimatic implications of latest Pleistocene radiocarbon dates from colluvium-mantled hollows, California. <i>Geology</i> , 1986, 14, 655.	4.4	57
144	Bed Load Transport in a River Meander. <i>Water Resources Research</i> , 1984, 20, 1355-1380.	4.2	243

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145	Settling velocity of natural particles. <i>Water Resources Research</i> , 1982, 18, 1615-1626.	4.2	787
146	When Models Meet Managers: Examples from Geomorphology. <i>Geophysical Monograph Series</i> , 0, , 27-40.	0.1	12
147	Geomorphic Transport Laws for Predicting Landscape form and Dynamics. <i>Geophysical Monograph Series</i> , 0, , 103-132.	0.1	234