William E Dietrich

List of Publications by Year in descending order

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147 24,626 84 139
papers citations h-index g-index

149 149 149 13009 all docs docs citations times ranked citing authors

#	Article	lF	CITATIONS
1	A physically based model for the topographic control on shallow landsliding. Water Resources Research, 1994, 30, 1153-1171.	4.2	1,206
2	Settling velocity of natural particles. Water Resources Research, 1982, 18, 1615-1626.	4.2	787
3	The soil production function and landscape equilibrium. Nature, 1997, 388, 358-361.	27.8	767
4	Constitutive mass balance relations between chemical composition, volume, density, porosity, and strain in metasomatic hydrochemical systems: Results on weathering and pedogenesis. Geochimica Et Cosmochimica Acta, 1987, 51, 567-587.	3.9	729
5	Downstream Ecological Effects of Dams. BioScience, 1995, 45, 183-192.	4.9	650
6	Modeling fluvial erosion on regional to continental scales. Journal of Geophysical Research, 1994, 99, 13971-13986.	3.3	641
7	Sediment and rock strength controls on river incision into bedrock. Geology, 2001, 29, 1087.	4.4	633
8	Sediment supply and the development of the coarse surface layer in gravel-bedded rivers. Nature, 1989, 340, 215-217.	27.8	587
9	A mechanistic model for river incision into bedrock by saltating bed load. Water Resources Research, 2004, 40, .	4.2	560
10	Evidence for nonlinear, diffusive sediment transport on hillslopes and implications for landscape morphology. Water Resources Research, 1999, 35, 853-870.	4.2	553
11	Where do channels begin?. Nature, 1988, 336, 232-234.	27.8	535
12	A process-based model for colluvial soil depth and shallow landsliding using digital elevation data. Hydrological Processes, 1995, 9, 383-400.	2.6	529
13	Source areas, drainage density, and channel initiation. Water Resources Research, 1989, 25, 1907-1918.	4.2	466
14	Bedload transport of fine gravel observed by motion-picture photography. Journal of Fluid Mechanics, 1988, 192, 193-217.	3.4	374
15	Weathering profiles, mass-balance analysis, and rates of solute loss: Linkages between weathering and erosion in a small, steep catchment. Bulletin of the Geological Society of America, 2002, 114, 1143-1158.	3.3	367
16	Is the critical Shields stress for incipient sediment motion dependent on channelâ€bed slope?. Journal of Geophysical Research, 2008, 113, .	3.3	364
17	The search for a topographic signature of life. Nature, 2006, 439, 411-418.	27.8	352
18	Analysis of Erosion Thresholds, Channel Networks, and Landscape Morphology Using a Digital Terrain Model. Journal of Geology, 1993, 101, 259-278.	1.4	348

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19	Physical basis for quasiâ€universal relations describing bankfull hydraulic geometry of singleâ€thread gravel bed rivers. Journal of Geophysical Research, 2007, 112, .	3.3	342
20	River longitudinal profiles and bedrock incision models: Stream power and the influence of sediment supply. Geophysical Monograph Series, 1998, , 237-260.	0.1	336
21	The variability of critical shear stress, friction angle, and grain protrusion in water-worked sediments. Sedimentology, 1990, 37, 647-672.	3.1	331
22	Hydrologic response of a steep, unchanneled valley to natural and applied rainfall. Water Resources Research, 1997, 33, 91-109.	4.2	309
23	Cosmogenic nuclides, topography, and the spatial variation of soil depth. Geomorphology, 1999, 27, 151-172.	2.6	290
24	Hydraulic Food-Chain Models. BioScience, 1995, 45, 159-167.	4.9	281
25	Dams and downstream aquatic biodiversity: Potential food web consequences of hydrologic and geomorphic change. Environmental Management, 1996, 20, 887-895.	2.7	273
26	Forest clearing and regional landsliding. Geology, 2000, 28, 311.	4.4	267
27	Stochastic processes of soil production and transport: erosion rates, topographic variation and cosmogenic nuclides in the Oregon Coast Range. Earth Surface Processes and Landforms, 2001, 26, 531-552.	2.5	247
28	Bed Load Transport in a River Meander. Water Resources Research, 1984, 20, 1355-1380.	4.2	243
29	SEASONAL REASSEMBLY OF A RIVER FOOD WEB: FLOODS, DROUGHTS, AND IMPACTS OF FISH. Ecological Monographs, 2008, 78, 263-282.	5.4	242
30	Erosion thresholds and land surface morphology. Geology, 1992, 20, 675.	4.4	237
31	Formation of evenly spaced ridges and valleys. Nature, 2009, 460, 502-505.	27.8	237
32	Unsaturated zone processes and the hydrologic response of a steep, unchanneled catchment. Water Resources Research, 1998, 34, 1865-1879.	4.2	235
33	Geomorphic Transport Laws for Predicting Landscape form and Dynamics. Geophysical Monograph Series, 0, , 103-132.	0.1	234
34	Shallow landsliding, root reinforcement, and the spatial distribution of trees in the Oregon Coast Range. Canadian Geotechnical Journal, 2003, 40, 237-253.	2.8	231
35	Direct observations of rock moisture, a hidden component of the hydrologic cycle. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 2664-2669.	7.1	231
36	Hillslope evolution by diffusive processes: The timescale for equilibrium adjustments. Water Resources Research, 1997, 33, 1307-1318.	4.2	228

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37	Soil production on a retreating escarpment in southeastern Australia. Geology, 2000, 28, 787.	4.4	223
38	Expanding the role of reactive transport models in critical zone processes. Earth-Science Reviews, 2017, 165, 280-301.	9.1	207
39	A bottom-up control on fresh-bedrock topography under landscapes. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 6576-6581.	7.1	205
40	Bedload sheets in heterogeneous sediment. Geology, 1988, 16, 105.	4.4	203
41	Spatial patterns of soil organic carbon on hillslopes: Integrating geomorphic processes and the biological C cycle. Geoderma, 2006, 130, 47-65.	5.1	199
42	Geomorphological signatures of varying climate. Nature, 1995, 374, 632-635.	27.8	188
43	A model for fluvial bedrock incision by impacting suspended and bed load sediment. Journal of Geophysical Research, 2008, 113, .	3.3	186
44	Hillslope evolution by nonlinear, slope-dependent transport: Steady state morphology and equilibrium adjustment timescales. Journal of Geophysical Research, 2001, 106, 16499-16513.	3.3	185
45	Quantification of soil production and downslope creep rates from cosmogenic 10Be accumulations on a hillslope profile. Geology, 1993, 21, 343.	4.4	184
46	A geometric framework for channel network extraction from lidar: Nonlinear diffusion and geodesic paths. Journal of Geophysical Research, 2010, 115 , .	3.3	183
47	Metal enrichment in bauxites by deposition of chemically mature aeolian dust. Nature, 1988, 333, 819-824.	27.8	182
48	Controls on the spacing of firstâ€order valleys. Journal of Geophysical Research, 2008, 113, .	3.3	182
49	The role of sediment in controlling steady-state bedrock channel slope: Implications of the saltation–abrasion incision model. Geomorphology, 2006, 82, 58-83.	2.6	173
50	Tidal networks: 2. Watershed delineation and comparative network morphology. Water Resources Research, 1999, 35, 3905-3917.	4.2	171
51	Flow resistance and sediment transport by concentrated overland flow in a grassland valley. Geomorphology, 1995, 13, 71-86.	2.6	167
52	Channel network extraction from high resolution topography using wavelets. Geophysical Research Letters, 2007, 34, .	4.0	166
53	Late Quaternary erosion in southeastern Australia: a field example using cosmogenic nuclides. Quaternary International, 2001, 83-85, 169-185.	1.5	164
54	Hillslope evolution by nonlinear creep and landsliding: An experimental study. Geology, 2001, 29, 143.	4.4	164

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55	The illusion of diffusion: Field evidence for depth-dependent sediment transport. Geology, 2005, 33, 949.	4.4	154
56	Can springs cut canyons into rock?. Journal of Geophysical Research, 2006, 111, .	3.3	153
57	Spectral signatures of characteristic spatial scales and nonfractal structure in landscapes. Journal of Geophysical Research, 2008, 113, .	3.3	153
58	Boundary shear stress and sediment transport in river meanders of sand and gravel. Water Resources Monograph, 1989, , 1-50.	1.0	151
59	Tidal networks: 1. Automatic network extraction and preliminary scaling features from digital terrain maps. Water Resources Research, 1999, 35, 3891-3904.	4.2	149
60	Erosion rates in the southern oregon coast range: Evidence for an equilibrium between hillslope erosion and sediment yield. Earth Surface Processes and Landforms, 1991, 16, 307-322.	2.5	141
61	Concentration-discharge relationships in runoff from a steep, unchanneled catchment. Water Resources Research, 1997, 33, 211-225.	4.2	131
62	Field measurements of incision rates following bedrock exposure: Implications for process controls on the long profiles of valleys cut by rivers and debris flows. Bulletin of the Geological Society of America, 2005, 117, 174.	3.3	130
63	Rain, rock moisture dynamics, and the rapid response of perched groundwater in weathered, fractured argillite underlying a steep hillslope. Water Resources Research, 2012, 48, .	4.2	124
64	Characterizing structural and lithologic controls on deep-seated landsliding: Implications for topographic relief and landscape evolution in the Oregon Coast Range, USA. Bulletin of the Geological Society of America, 2005, 117, 654.	3.3	120
65	Response of bed surface patchiness to reductions in sediment supply. Journal of Geophysical Research, 2009, 114, .	3.3	116
66	Piezometric response in shallow bedrock at CB1: Implications for runoff generation and landsliding. Water Resources Research, 2002, 38, 10-1-10-18.	4.2	112
67	Process-based model linking pocket gopher (Thomomys bottae) activity to sediment transport and soil thickness. Geology, 2005, 33, 917.	4.4	112
68	Dam Removal Express Assessment Models (DREAM) Journal of Hydraulic Research/De Recherches Hydrauliques, 2006, 44, 291-307.	1.7	112
69	Integration of geochemical mass balance with sediment transport to calculate rates of soil chemical weathering and transport on hillslopes. Journal of Geophysical Research, 2007, 112, .	3.3	112
70	The origin and evolution of the Peace Vallis fan system that drains to the <i>Curiosity</i> landing area, Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2014, 119, 705-728.	3.6	112
71	Influence of rock mass strength on the erosion rate of alpine cliffs. Earth Surface Processes and Landforms, 2009, 34, 1339-1352.	2.5	110
72	Erosion of upland hillslope soil organic carbon: Coupling field measurements with a sediment transport model. Global Biogeochemical Cycles, 2005, 19, .	4.9	103

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73	Contrasting effects of soil development on hydrological properties and flow paths. Water Resources Research, 2005, 41, .	4.2	103
74	Runoff generation in a steep, soil-mantled landscape. Water Resources Research, 2002, 38, 7-1-7-8.	4.2	101
75	Sediment supply and relative size distribution effects on fine sediment infiltration into immobile gravels. Water Resources Research, 2008, 44, .	4.2	99
76	Translation and dispersion of sediment pulses in flume experiments simulating gravel augmentation below dams. Water Resources Research, 2009, 45, .	4.2	99
77	A multidimensional stability model for predicting shallow landslide size and shape across landscapes. Journal of Geophysical Research F: Earth Surface, 2014, 119, 2481-2504.	2.8	98
78	Spatial and temporal dynamics of sediment accumulation and exchange along Strickland River floodplains (Papua New Guinea) over decadalâ€ŧo entennial timescales. Journal of Geophysical Research, 2008, 113, .	3.3	97
79	Effects of coarse grain size distribution and fine particle content on pore fluid pressure and shear behavior in experimental debris flows. Journal of Geophysical Research F: Earth Surface, 2016, 121, 415-441.	2.8	97
80	Lithologically Controlled Subsurface Critical Zone Thickness and Water Storage Capacity Determine Regional Plant Community Composition. Water Resources Research, 2019, 55, 3028-3055.	4.2	97
81	Tie channel sedimentation rates, oxbow formation age and channel migration rate from optically stimulated luminescence (OSL) analysis of floodplain deposits. Earth Surface Processes and Landforms, 2005, 30, 1161-1179.	2.5	96
82	Hillslope soils and vegetation. Geomorphology, 2015, 234, 122-132.	2.6	94
83	Validation of the Shallow Landslide Model, SHALSTAB, for forest management. Water Science and Application, 2001, , 195-227.	0.3	91
84	Quantification of chemical weathering rates across an actively eroding hillslope. Earth and Planetary Science Letters, 2006, 242, 155-169.	4.4	90
85	The frontier beneath our feet. Water Resources Research, 2017, 53, 2605-2609.	4.2	90
86	The sensitivity of hillslope bedrock erosion to precipitation. Earth Surface Processes and Landforms, 2011, 36, 117-135.	2.5	89
87	Physicsâ€based continuous simulation of longâ€term nearâ€surface hydrologic response for the Coos Bay experimental catchment. Water Resources Research, 2008, 44, .	4.2	85
88	Toward a unified science of the Earth's surface: Opportunities for synthesis among hydrology, geochemistry, and ecology. Water Resources Research, 2006, 42, .	4.2	83
89	Dynamic, structured heterogeneity of water isotopes inside hillslopes. Water Resources Research, 2016, 52, 164-189.	4.2	83
90	Implications of the saltation–abrasion bedrock incision model for steadyâ€state river longitudinal profile relief and concavity. Earth Surface Processes and Landforms, 2008, 33, 1129-1151.	2.5	82

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91	The depositional web on the floodplain of the Fly River, Papua New Guinea. Journal of Geophysical Research, 2008, 113, .	3.3	82
92	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
93	Controls on solute concentrationâ€discharge relationships revealed by simultaneous hydrochemistry observations of hillslope runoff and stream flow: The importance of critical zone structure. Water Resources Research, 2017, 53, 1424-1443.	4.2	74
94	Sequence and relative timing of large lakes in Gale crater (Mars) after the formation of Mount Sharp. Journal of Geophysical Research E: Planets, 2016, 121, 472-496.	3.6	72
95	Analysis of Hillslope Erosion Rates Using Dated Colluvial Deposits. Journal of Geology, 1989, 97, 45-63.	1.4	69
96	Biogeochemical characterization of carbon sources in the Strickland and Fly rivers, Papua New Guinea. Journal of Geophysical Research, 2008, 113, .	3.3	68
97	Statistical description of slopeâ€dependent soil transport and the diffusionâ€like coefficient. Journal of Geophysical Research, 2009, 114, .	3.3	68
98	Chemical reactions, porosity, and microfracturing in shale during weathering: The effect of erosion rate. Geochimica Et Cosmochimica Acta, 2020, 269, 63-100.	3.9	68
99	The importance of hollows in debris flow studies; Examples from Marin County, California. Reviews in Engineering Geology, 1987, , 165-180.	0.1	67
100	Do gravel bed river size distributions record channel network structure?. Water Resources Research, 2006, 42, .	4.2	67
101	Hydrologic Processes in a Low-Gradient Source Area. Water Resources Research, 1995, 31, 1-10.	4.2	66
102	Instrumental record of debris flow initiation during natural rainfall: Implications for modeling slope stability. Journal of Geophysical Research, 2009, 114 , .	3.3	66
103	Quantification of the seasonal hillslope water storage that does not drive streamflow. Hydrological Processes, 2018, 32, 1978-1992.	2.6	66
104	Unravelling the conundrum of river response to rising seaâ€level from laboratory to field. Part II. The Fly–Strickland River system, Papua New Guinea. Sedimentology, 2008, 55, 1657-1686.	3.1	64
105	Geomorphic and paleoclimatic implications of latest Pleistocene radiocarbon dates from colluvium-mantled hollows, California. Geology, 1986, 14, 655.	4.4	57
106	Bed topography and the development of forced bed surface patches. Journal of Geophysical Research, 2010, 115, .	3.3	54
107	Cosmetic Isotope Analyses Applied to River Longitudinal Profile Evolution: Problems and Interpretations. Earth Surface Processes and Landforms, 1997, 22, 195-209.	2.5	53
108	Experimental study of bedrock erosion by granular flows. Journal of Geophysical Research, 2008, 113 , .	3.3	51

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109	Turbulent characteristics of a shallow wall-bounded plane jet: experimental implications for river mouth hydrodynamics. Journal of Fluid Mechanics, 2009, 627, 423-449.	3.4	50
110	Influence of bed patchiness, slope, grain hiding, and form drag on gravel mobilization in very steep streams. Journal of Geophysical Research F: Earth Surface, 2013, 118, 982-1001.	2.8	48
111	The Landscape Evolution Observatory: A large-scale controllable infrastructure to study coupled Earth-surface processes. Geomorphology, 2015, 244, 190-203.	2.6	47
112	Dam Removal Express Assessment Models (DREAM). Journal of Hydraulic Research/De Recherches Hydrauliques, 2006, 44, 308-323.	1.7	45
113	Sediment load and floodplain deposition rates: Comparison of the Fly and Strickland rivers, Papua New Guinea. Journal of Geophysical Research, 2008, 113, .	3.3	45
114	Morphodynamics of subaqueous levee formation: Insights into river mouth morphologies arising from experiments. Journal of Geophysical Research, 2010, 115, .	3.3	44
115	Vegetation induced changes in the stable isotope composition of near surface humidity. Ecohydrology, 2014, 7, 936-949.	2.4	42
116	Delineation of river bed-surface patches by clustering high-resolution spatial grain size data. Geomorphology, 2014, 205, 102-119.	2.6	42
117	Unravelling the conundrum of river response to rising seaâ€level from laboratory to field. Part I: Laboratory experiments. Sedimentology, 2008, 55, 1643-1655.	3.1	41
118	Managing reservoir sediment release in dam removal projects: An approach informed by physical and numerical modelling of nonâ€cohesive sediment. International Journal of River Basin Management, 2009, 7, 433-452.	2.7	40
119	A spectral clustering search algorithm for predicting shallow landslide size and location. Journal of Geophysical Research F: Earth Surface, 2015, 120, 300-324.	2.8	38
120	Quantitative linkages among sediment supply, streambed fine sediment, and benthic macroinvertebrates in northern California streams. Journal of the North American Benthological Society, 2008, 27, 135-149.	3.1	31
121	Localized precipitation and runoff on Mars. Journal of Geophysical Research, 2011, 116, .	3.3	31
122	Ice-driven creep on Martian debris slopes. Geophysical Research Letters, 2003, 30, .	4.0	28
123	Predicting shallow landslide size and location across a natural landscape: Application of a spectral clustering search algorithm. Journal of Geophysical Research F: Earth Surface, 2015, 120, 2552-2585.	2.8	28
124	Controls on the distribution and resilience of Quercus garryana : ecophysiological evidence of oak's waterâ€imitation tolerance. Ecosphere, 2018, 9, e02218.	2,2	25
125	Coevolution of bed surface patchiness and channel morphology: 1. Mechanisms of forced patch formation. Journal of Geophysical Research F: Earth Surface, 2015, 120, 1687-1707.	2.8	22
126	Continental-scale relationship between bankfull width and drainage area for single-thread alluvial channels. Water Resources Research, 2014, 50, 919-936.	4.2	21

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127	Response of the Strickland and Fly River confluence to postglacial sea level rise. Journal of Geophysical Research, 2008, 113, .	3.3	19
128	Simulating Sediment Transport in a Flume with Forced Pool-Riffle Morphology: Examinations of Two One-Dimensional Numerical Models. Journal of Hydraulic Engineering, 2008, 134, 892-904.	1.5	19
129	Orbital and Inâ€Situ Investigation of Periodic Bedrock Ridges in Glen Torridon, Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	18
130	Hillslopes, Channels, and Landscape Scale. , 1998, , 30-60.		17
131	Controls on the size distributions of shallow landslides. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118 , .	7.1	17
132	Coevolution of bed surface patchiness and channel morphology: 2. Numerical experiments. Journal of Geophysical Research F: Earth Surface, 2015, 120, 1708-1723.	2.8	15
133	Chaos terrain, storms, and past climate on Mars. Journal of Geophysical Research, 2011, 116, .	3.3	13
134	Seasonal shifts in the solute ion ratios of vadose zone rock moisture from the Eel River Critical Zone Observatory. Acta Geochimica, 2017, 36, 385-388.	1.7	13
135	The Relationship Between Topography, Bedrock Weathering, and Water Storage Across a Sequence of Ridges and Valleys. Journal of Geophysical Research F: Earth Surface, 2021, 126, e2020JF005848.	2.8	13
136	When Models Meet Managers: Examples from Geomorphology. Geophysical Monograph Series, 0, , 27-40.	0.1	12
137	Origin and composition of three heterolithic boulder- and cobble-bearing deposits overlying the Murray and Stimson formations, Gale Crater, Mars. Icarus, 2020, 350, 113897.	2.5	11
138	Flow resistance and sediment transport by concentrated overland flow in a grassland valley. , 1995 , , $71-86$.		11
139	Reply to comment by Richard M. Iverson on "Piezometric response in shallow bedrock at CB1: Implications for runoff generation and landslidingâ€. Water Resources Research, 2004, 40, .	4.2	7
140	Upscaling river biomass using dimensional analysis and hydrogeomorphic scaling. Geophysical Research Letters, 2007, 34, .	4.0	7
141	Inverted channel variations identified on a distal portion of a bajada in the central Atacama Desert, Chile. Geomorphology, 2021, 393, 107925.	2.6	6
142	Multicriteria analysis on rock moisture and streamflow in a rainfallâ€runoff model improves accuracy of model results. Hydrological Processes, 2022, 36, .	2.6	1
143	Hydrologic and erosional processes in hollows, Lone Tree Creek, Marin County, California. , 1989 , , $74-89$.		0
144	Trip log: Day 1 (July 1, 1989): Marin Headlands. , 1989, , 38-41.		0

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#	#	Article	IF	CITATIONS
1	145	William E. Dietrich Receives 2009 Robert E. Horton Medal. Eos, 2010, 91, 47-47.	0.1	0
1	146	Dietrich receives 2010 G. K. Gilbert Award: Response. Eos, 2011, 92, 205-205.	0.1	0
1	147	Howard Receives 2013 G. K. Gilbert Award: Citation. Eos, 2014, 95, 344-344.	0.1	0