Jon D Pelletier

List of Publications by Year
in descending order

125 papers	6,437 citations	81900 39 h-index	74163 75 g-index
134 all docs	134 docs citations	134 times ranked	8139 citing authors

#	Article	IF	Citations
1	The Community Land Model Version 5: Description of New Features, Benchmarking, and Impact of Forcing Uncertainty. Journal of Advances in Modeling Earth Systems, 2019, 11, 4245-4287.	3.8	692
2	Wind erosion in the Qaidam basin, central Asia: Implications for tectonics, paleoclimate, and the source of the Loess Plateau. GSA Today, 2011, 21, 4-10.	2.0	593
3	Hillslope Hydrology in Global Change Research and Earth System Modeling. Water Resources Research, 2019, 55, 1737-1772.	4.2	281
4	Mountains, monsoons, and megafans. Geology, 2005, 33, 289.	4.4	209
5	Scale-invariance of soil moisture variability and its implications for the frequency-size distribution of landslides. Engineering Geology, 1997, 48, 255-268.	6.3	196
6	Long-range persistence in climatological and hydrological time series: analysis, modeling and application to drought hazard assessment. Journal of Hydrology, 1997, 203, 198-208.	5.4	190
7	A gridded global data set of soil, intact regolith, and sedimentary deposit thicknesses for regional and global land surface modeling. Journal of Advances in Modeling Earth Systems, 2016, 8, 41-65.	3.8	161
8	A robust, twoâ€parameter method for the extraction of drainage networks from highâ€resolution digital elevation models (<scp>DEMs</scp>): Evaluation using synthetic and realâ€world <scp>DEMs</scp>. Water Resources Research, 2013, 49, 75-89.	4.2	126
9	Recent bright gully deposits on Mars: Wet or dry flow?. Geology, 2008, 36, 211.	4.4	124
10	Geomorphology, complexity, and the emerging science of the Earth's surface. Geomorphology, 2009, 103, 496-505.	2.6	120
11	Networks with Side Branching in Biology. Journal of Theoretical Biology, 1998, 193, 577-592.	1.7	117
12	Geomorphically based predictive mapping of soil thickness in upland watersheds. Water Resources Research, 2009, 45, .	4.2	115
13	Analysis and Modeling of the Natural Variability of Climate. Journal of Climate, 1997, 10, 1331-1342.	3.2	112
14	How Water, Carbon, and Energy Drive Critical Zone Evolution: The Jemezâ€“Santa Catalina Critical Zone Observatory. Vadose Zone Journal, 2011, 10, 884-899.	2.2	111
15	An open system framework for integrating critical zone structure and function. Biogeochemistry, 2011, 102, 15-29.	3.5	103
16	Forecasting the response of Earth's surface to future climatic and land use changes: A review of methods and research needs. Earth's Future, 2015, 3, 220-251.	6.3	98
17	Drainage basin evolution in the Rainfall Erosion Facility: dependence on initial conditions. Geomorphology, 2003, 53, 183-196.	2.6	92
18	A spatially distributed model for the longâ€term suspended sediment discharge and delivery ratio of drainage basins. Journal of Geophysical Research, 2012, 117, .	3.3	90

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19	Self-Affine Time Series: II. Applications and Models. Advances in Geophysics, 1999, 40, 91-166.	2.8	80
20	Eocene to recent variations in erosion across the central Andean fold-thrust belt, northern Bolivia: Implications for plateau evolution. Earth and Planetary Science Letters, 2006, 248, 118-133.	4.4	80
21	The power spectral density of atmospheric temperature from time scales of 10âˆ’2 to 106 yr. Earth and Planetary Science Letters, 1998, 158, 157-164.	4.4	77
22	Coevolution of nonlinear trends in vegetation, soils, and topography with elevation and slope aspect: A case study in the sky islands of southern Arizona. Journal of Geophysical Research F: Earth Surface, 2013, 118, 741-758.	2.8	76
23	Which way do you lean? Using slope aspect variations to understand Critical Zone processes and feedbacks. Earth Surface Processes and Landforms, 2018, 43, 1133-1154.	2.5	70
24	Rare earth elements as reactive tracers of biogeochemical weathering in forested rhyolitic terrain. Chemical Geology, 2015, 391, 19-32.	3.3	67
25	How do sediment yields from postâ€wildfire debrisâ€laden flows depend on terrain slope, soil burn severity class, and drainage basin area? Insights from airborneâ€LiDAR change detection. Earth Surface Processes and Landforms, 2014, 39, 1822-1832.	2.5	62
26	Fluvial and slopeâ€wash erosion of soilâ€mantled landscapes: detachmentâ€or transportâ€limited?. Earth Surface Processes and Landforms, 2012, 37, 37-51.	2.5	60
27	Critical Zone Services: Expanding Context, Constraints, and Currency beyond Ecosystem Services. Vadose Zone Journal, 2015, 14, vzj2014.10.0142.	2.2	60
28	An integrated approach to flood hazard assessment on alluvial fans using numerical modeling, field mapping, and remote sensing. Bulletin of the Geological Society of America, 2005, 117, 1167.	3.3	57
29	Geochemical evolution of the <scp>C</scp>ritical <scp>Z</scp>one across variable time scales informs concentrationâ€discharge relationships: <scp>J</scp>emez <scp>R</scp>iver <scp>B</scp>asin <scp>C</scp>ritical <scp>Z</scp>one <scp>O</scp>bservatory. Water Resources Research, 2017, 53, 4169-4196.	4.2	57
30	Crack propagation by differential insolation on desert surface clasts. Geomorphology, 2008, 102, 472-481.	2.6	56
31	Controls on the height and spacing of eolian ripples and transverse dunes: A numerical modeling investigation. Geomorphology, 2009, 105, 322-333.	2.6	55
32	Quantifying the climatic and tectonic controls on hillslope steepness and erosion rate. Lithosphere, 2009, 1, 73-80.	1.4	52
33	Implementing and Evaluating Variable Soil Thickness in the Community Land Model, Version 4.5 (CLM4.5). Journal of Climate, 2016, 29, 3441-3461.	3.2	49
34	Controls on the spacing and geometry of rill networks on hillslopes: Rain splash detachment, initial hillslope roughness, and the competition between fluvial and colluvial transport. Journal of Geophysical Research F: Earth Surface, 2013, 118, 241-256.	2.8	48
35	The Landscape Evolution Observatory: A large-scale controllable infrastructure to study coupled Earth-surface processes. Geomorphology, 2015, 244, 190-203.	2.6	47
36	Why Do Largeâ€Scale Land Surface Models Produce a Low Ratio of Transpiration to Evapotranspiration?. Journal of Geophysical Research D: Atmospheres, 2018, 123, 9109-9130.	3.3	47

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37	Colloids and organic matter complexation control trace metal concentration-discharge relationships in Marshall Gulch stream waters. Water Resources Research, 2016, 52, 7931-7944.	4.2	45
38	The effects of interdune vegetation changes on eolian dune field evolution: a numericalâ€modeling case study at Jockey's Ridge, North Carolina, USA. Earth Surface Processes and Landforms, 2009, 34, 1245-1254.	2.5	43
39	Desert pavement dynamics: numerical modeling and field-based calibration. Earth Surface Processes and Landforms, 2007, 32, 1913-1927.	2.5	41
40	A hybridâ€3D hillslope hydrological model for use in <scp>E</scp>arth system models. Water Resources Research, 2015, 51, 8218-8239.	4.2	41
41	Evolution of the Bonneville shoreline scarp in west-central Utah: Comparison of scarp-analysis methods and implications for the diffusion model of hillslope evolution. Geomorphology, 2006, 74, 257-270.	2.6	40
42	Modeling the formation of bright slope deposits associated with gullies in Hale Crater, Mars: Implications for recent liquid water. Icarus, 2010, 205, 113-137.	2.5	39
43	From dust to dust: Quaternary wind erosion of the Mu Us Desert and Loess Plateau, China. Geology, 2015, 43, 835-838.	4.4	39
44	Quantifying Topographic and Vegetation Effects on the Transfer of Energy and Mass to the Critical Zone. Vadose Zone Journal, 2015, 14, 1-16.	2.2	37
45	Laser vision: lidar as a transformative tool to advance critical zone science. Hydrology and Earth System Sciences, 2015, 19, 2881-2897.	4.9	37
46	Minimizing the grid-resolution dependence of flow-routing algorithms for geomorphic applications. Geomorphology, 2010, 122, 91-98.	2.6	36
47	Numerical modeling of the Cenozoic geomorphic evolution of the southern Sierra Nevada, California. Earth and Planetary Science Letters, 2007, 259, 85-96.	4.4	35
48	Development of topographic asymmetry: Insights from dated cinder cones in the western United States. Journal of Geophysical Research F: Earth Surface, 2014, 119, 1725-1750.	2.8	35
49	Quantifying the time scale of elevated geomorphic response following wildfires using multi-temporal LiDAR data: An example from the Las Conchas fire, Jemez Mountains, New Mexico. Geomorphology, 2015, 232, 224-238.	2.6	33
50	Sensitivity of playa windblown-dust emissions to climatic and anthropogenic change. Journal of Arid Environments, 2006, 66, 62-75.	2.4	31
51	Nonlinear slope-dependent sediment transport in cinder cone evolution. Geology, 2007, 35, 1067.	4.4	31
52	Hillslope-scale experiment demonstrates the role of convergence during two-step saturation. Hydrology and Earth System Sciences, 2014, 18, 3681-3692.	4.9	31
53	Kardar-Parisi-Zhang Scaling of the Height of the Convective Boundary Layer and Fractal Structure of Cumulus Cloud Fields. Physical Review Letters, 1997, 78, 2672-2675.	7.8	30
54	Are large complex ecosystems more unstable? A theoretical reassessment with predator switching. Mathematical Biosciences, 2000, 163, 91-96.	1.9	30

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55	Numerical modeling of the late Cenozoic geomorphic evolution of Grand Canyon, Arizona. Bulletin of the Geological Society of America, 2010, 122, 595-608.	3.3	30
56	The predominance of postâ€wildfire erosion in the longâ€term denudation of the Valles Caldera, New Mexico. Journal of Geophysical Research F: Earth Surface, 2016, 121, 843-864.	2.8	30
57	Controls on the aerodynamic roughness length and the grainâ€size dependence of aeolian sediment transport. Earth Surface Processes and Landforms, 2018, 43, 2616-2626.	2.5	30
58	Estimate of three-dimensional flexural-isostatic response to unloading: Rock uplift due to late Cenozoic glacial erosion in the western United States. Geology, 2004, 32, 161.	4.4	29
59	Investigating gully flow emplacement mechanisms using apex slopes. Icarus, 2010, 208, 132-142.	2.5	29
60	Incipient subsurface heterogeneity and its effect on overland flow generation â€" insight from a modeling study of the first experiment at the Biosphere 2 Landscape Evolution Observatory. Hydrology and Earth System Sciences, 2014, 18, 1873-1883.	4.9	29
61	Controls on valley spacing in landscapes subject to rapid baseâ€level fall. Earth Surface Processes and Landforms, 2016, 41, 460-472.	2.5	29
62	Calibration and testing of upland hillslope evolution models in a dated landscape: Banco Bonito, New Mexico. Journal of Geophysical Research, 2011, 116, .	3.3	28
63	Deposition of playa windblown dust over geologic time scales. Geology, 2005, 33, 909.	4.4	27
64	Fractal behavior in space and time in a simplified model of fluvial landform evolution. Geomorphology, 2007, 91, 291-301.	2.6	27
65	Controls on the geometry of potholes in bedrock channels. Geophysical Research Letters, 2015, 42, 797-803.	4.0	27
66	Statistical self-similarity of magmatism and volcanism. Journal of Geophysical Research, 1999, 104, 15425-15438.	3.3	25
67	Quantifying geomorphic change at ephemeral stream restoration sites using a coupled-model approach. Geomorphology, 2017, 283, 1-16.	2.6	25
68	Correlation and dating of Quaternary alluvial-fan surfaces using scarp diffusion. Geomorphology, 2004, 60, 319-335.	2.6	24
69	How do pediments form?: A numerical modeling investigation with comparison to pediments in southern Arizona, USA. Bulletin of the Geological Society of America, 2010, 122, 1815-1829.	3.3	24
70	Controls of glacial valley spacing on earth and mars. Geomorphology, 2010, 116, 189-201.	2.6	23
71	Predicting the thickness and aeolian fraction of soils in upland watersheds of the Mojave Desert. Geoderma, 2013, 195-196, 94-110.	5.1	23
72	The role of weathering in the formation of bedrock valleys on Earth and Mars: A numerical modeling investigation. Journal of Geophysical Research, 2011, 116, .	3.3	22

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73	Topographic correlations with soil and regolith thickness from shallowâ€seismic refraction constraints across upland hillslopes in the Valles Caldera, New Mexico. Earth Surface Processes and Landforms, 2016, 41, 1684-1696.	2.5	22
74	Oscillations in arid alluvial-channel geometry. Geology, 2004, 32, 713.	4.4	21
75	An integrated modelling framework of catchmentâ€scale ecohydrological processes: 2. The role of water subsidy by overland flow on vegetation dynamics in a semiâ€arid catchment. Ecohydrology, 2014, 7, 815-827.	2.4	20
76	Cantor set model of eolian dust deposits on desert alluvial fan terraces. Geology, 2007, 35, 439.	4.4	19
77	Tectonic and structural control of fluvial channel morphology in metamorphic core complexes: The example of the Catalina-Rincon core complex, Arizona. , 2009, 5, 363-384.		18
78	Testing the hybridâ€3â€D hillslope hydrological model in a controlled environment. Water Resources Research, 2016, 52, 1089-1107.	4.2	18
79	The linkages among hillslope-vegetation changes, elevation, and the timing of late-Quaternary fluvial-system aggradation in the Mojave Desert revisited. Earth Surface Dynamics, 2014, 2, 455-468.	2.4	18
80	Species-Area Relation and Self-Similarity in a Biogeographical Model of Speciation and Extinction. Physical Review Letters, 1999, 82, 1983-1986.	7.8	17
81	Dynamics of sediment storage and release on aeolian dune slip faces: A field study in Jericoacoara, Brazil. Journal of Geophysical Research F: Earth Surface, 2015, 120, 1911-1934.	2.8	17
82	Controls on Yardang Development and Morphology: 1. Field Observations and Measurements at Ocotillo Wells, California. Journal of Geophysical Research F: Earth Surface, 2018, 123, 694-722.	2.8	17
83	A net ecosystem carbon budget for snow dominated forested headwater catchments: linking water and carbon fluxes to critical zone carbon storage. Biogeochemistry, 2018, 138, 225-243.	3.5	17
84	Spring-block models of seismicity: Review and analysis of a structurally heterogeneous model coupled to a viscous asthenosphere. Geophysical Monograph Series, 2000, , 27-42.	0.1	16
85	How do vegetation bands form in dry lands? Insights from numerical modeling and field studies in southern Nevada, USA. Journal of Geophysical Research, 2012, 117, .	3.3	16
86	Bedrock landscape development modeling: Calibration using field study, geochronology, and digital elevation model analysis. Bulletin of the Geological Society of America, 2007, 119, 157-173.	3.3	15
87	Erosion-rate determination from foreland basin geometry. Geology, 2007, 35, 5.	4.4	15
88	Controls on the largeâ€scale spatial variations of dune field properties in the barchanoid portion of White Sands dune field, New Mexico. Journal of Geophysical Research F: Earth Surface, 2015, 120, 453-473.	2.8	15
89	Predicting the roughness length of turbulent flows over landscapes with multi-scale microtopography. Earth Surface Dynamics, 2016, 4, 391-405.	2.4	15
90	Controls on Yardang Development and Morphology: 2. Numerical Modeling. Journal of Geophysical Research F: Earth Surface, 2018, 123, 723-743.	2.8	15

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91	Relationships among climate, erosion, topography, and delamination in the Andes: A numerical modeling investigation. Geology, 2010, 38, 259-262.	4.4	14
92	Widespread hillslope gullying on the southeastern Tibetan Plateau: Human or climate-change induced?. Bulletin of the Geological Society of America, 2011, 123, 1926-1938.	3.3	14
93	Deviations from self-similarity in barchan form and flux: The case of the Salton Sea dunes, California. Journal of Geophysical Research F: Earth Surface, 2013, 118, 2406-2420.	2.8	14
94	The influence of Holocene vegetation changes on topography and erosion rates: a case study at Walnut Gulch Experimental Watershed, Arizona. Earth Surface Dynamics, 2016, 4, 471-488.	2.4	14
95	Model Assessments of the Optimal Design of Nature Reserves for Maximizing Species Longevity. Journal of Theoretical Biology, 2000, 202, 25-32.	1.7	13
96	How do spiral troughs form on Mars?. Geology, 2004, 32, 365.	4.4	13
97	CO₂diffusion into pore spaces limits weathering rate of an experimental basalt landscape. Geology, 2017, 45, 203-206.	4.4	13
98	Asymmetry of weatheringâ€limited hillslopes: the importance of diurnal covariation in solar insolation and temperature. Earth Surface Processes and Landforms, 2017, 42, 1408-1418.	2.5	13
99	Geomorphic imprints of repeated tsunami waves in a coastal valley in northeastern Japan. Geomorphology, 2015, 242, 3-10.	2.6	12
100	Coevolution of soil and topography across a semiarid cinder cone chronosequence. Catena, 2017, 156, 338-352.	5.0	12
101	Paleointensity variations of Earth's magnetic field and their relationship with polarity reversals. Physics of the Earth and Planetary Interiors, 1999, 110, 115-128.	1.9	11
102	Glacial erosion and mountain building. Geology, 2008, 36, 591.	4.4	11
103	Multiscale bed form interactions and their implications for the abruptness and stability of the downwind dune field margin at White Sands, New Mexico, USA. Journal of Geophysical Research F: Earth Surface, 2014, 119, 2396-2411.	2.8	11
104	Analytic solution for the morphology of a soil-mantled valley undergoing steady headward growth: Validation using case studies in southeastern Arizona. Journal of Geophysical Research, 2012, 117, n/a-n/a.	3.3	10
105	Self-affinity and surface-area-dependent fluctuations of lake-level time series. Water Resources Research, 2015, 51, 7258-7269.	4.2	9
106	Controlled Experiments of Hillslope Coevolution at the Biosphere 2 Landscape Evolution Observatory: Toward Prediction of Coupled Hydrological, Biogeochemical, and Ecological Change. , 0, , .		9
107	Quantifying the controls on potential soil production rates: a case study of the San Gabriel Mountains, California. Earth Surface Dynamics, 2017, 5, 479-492.	2.4	8
108	2.3 Fundamental Principles and Techniques of Landscape Evolution Modeling. , 2013, , 29-43.		7

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109	Cosmogenic 3He age estimates of Plio-Pleistocene alluvial-fan surfaces in the Lower Colorado River Corridor, Arizona, USA. Quaternary Research, 2013, 79, 86-99.	1.7	7
110	Dispersion of channel-sediment contaminants in distributary fluvial systems: Application to fluvial tephra and radionuclide redistribution following a potential volcanic eruption at Yucca Mountain. Geomorphology, 2008, 94, 226-246.	2.6	6
111	A probabilistic approach to quantifying soil physical properties via time-integrated energy and mass input. Soil, 2017, 3, 67-82.	4.9	5
112	Variations in Solar Luminosity from Timescales of Minutes to Months. Astrophysical Journal, 1996, 463, L41-L45.	4.5	4
113	Signatures of Obliquity and Eccentricity in Soil Chronosequences. Geophysical Research Letters, 2018, 45, 11,147.	4.0	4
114	Selfâ€Affine Fractal Spatial and Temporal Variability of the San Pedro River, Southern Arizona. Journal of Geophysical Research F: Earth Surface, 2019, 124, 1540-1558.	2.8	4
115	An algorithm to reduce a river network or other graph-like polygon to a set of lines. Computers and Geosciences, 2020, 145, 104554.	4.2	4
116	Quantification and classification of grainflow morphology on natural dunes. Earth Surface Processes and Landforms, 2022, 47, 1808-1819.	2.5	4
117	Evaluating suitability of a tephra dispersal model as part of a risk assessment framework. Journal of Volcanology and Geothermal Research, 2008, 177, 397-404.	2.1	3
118	Wind-driven reorganization of coarse clasts on the surface of Mars. Geology, 2009, 37, 55-58.	4.4	3
119	Relationships between debris fan morphology and flow rheology for wet and dry flows on Earth and Mars: A numerical modeling investigation. Geomorphology, 2013, 197, 145-155.	2.6	3
120	Decadal-scale soil redistribution along hillslopes in the Mojave Desert. Earth Surface Dynamics, 2015, 3, 251-264.	2.4	3
121	Scaling GIS analysis tasks from the desktop to the cloud utilizing contemporary distributed computing and data management approaches. , 2016, , .		3
122	Constraining frequencyâ€"magnitudeâ€"area relationships for rainfall and flood discharges using radar-derived precipitation estimates: example applications in the Upper and Lower Colorado River basins, USA. Hydrology and Earth System Sciences, 2016, 20, 4483-4501.	4.9	1
123	Assessing Ability to Forecast Geomorphic System Responses to Climate and Land-Use Changes. Eos, 2014, 95, 3-3.	0.1	0
124	Earth surface modeling for education: How effective is it? Four semesters of classroom tests with WILSIMâ€GC. British Journal of Educational Technology, 2019, 50, 1462-1481.	6.3	0
125	Fundamental Principles and Techniques of Landscape Evolution Modeling. , 2013, , 27-42.		0