Michael Lamb

List of Publications by Year
in descending order

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Version: 2024-02-01

129 papers	7,213 citations	41258 49 h-index	62479 80 g-index
133 all docs	133 docs citations	133 times ranked	4846 citing authors

#	Article	IF	Citations
1	Deposition, exhumation, and paleoclimate of an ancient lake deposit, Gale crater, Mars. Science, 2015, 350, aac7575.	6.0	471
2	Is the critical Shields stress for incipient sediment motion dependent on channelâ€bed slope?. Journal of Geophysical Research, 2008, 113, .	3.3	364
3	A model for fluvial bedrock incision by impacting suspended and bed load sediment. Journal of Geophysical Research, 2008, 113, .	3.3	186
4	Spatial and temporal trends for water-flow velocity and bed-material sediment transport in the lower Mississippi River. Bulletin of the Geological Society of America, 2012, 124, 400-414.	1.6	167
5	Can springs cut canyons into rock?. Journal of Geophysical Research, 2006, 111, .	3.3	153
6	Formation of Box Canyon, Idaho, by Megaflood: Implications for Seepage Erosion on Earth and Mars. Science, 2008, 320, 1067-1070.	6.0	148
7	Growth and form of the mound in Gale Crater, Mars: Slope wind enhanced erosion and transport. Geology, 2013, 41, 543-546.	2.0	147
8	Backwater and river plume controls on scour upstream of river mouths: Implications for fluvioâ€deltaic morphodynamics. Journal of Geophysical Research, 2012, 117, .	3.3	146
9	Large wind ripples on Mars: A record of atmospheric evolution. Science, 2016, 353, 55-58.	6.0	144
10	A physical model for seismic noise generation from sediment transport in rivers. Geophysical Research Letters, 2012, 39, .	1.5	141
11	Backwater controls of avulsion location on deltas. Geophysical Research Letters, 2012, 39, .	1.5	139
12	Deltaic deposits at Aeolis Dorsa: Sedimentary evidence for a standing body of water on the northern plains of Mars. Journal of Geophysical Research E: Planets, 2013, 118, 1285-1302.	1.5	139
13	Rapid formation of a modern bedrock canyon by a single flood event. Nature Geoscience, 2010, 3, 477-481.	5.4	127
14	The persistence of waterfalls in fractured rock. Bulletin of the Geological Society of America, 2009, 121, 1123-1134.	1.6	125
15	Do hyperpycnal-flow deposits record river-flood dynamics?. Geology, 2009, 37, 1067-1070.	2.0	122
16	Formation of amphitheater-headed valleys by waterfall erosion after large-scale slumping on Hawai'i. Bulletin of the Geological Society of America, 2007, 119, 805-822.	1.6	121
17	O₂constraints from Paleoproterozoic detrital pyrite and uraninite. Bulletin of the Geological Society of America, 2014, 126, 813-830.	1.6	115
18	A physical model for seismic noise generation by turbulent flow in rivers. Journal of Geophysical Research F: Earth Surface, 2014, 119, 2209-2238.	1.0	110

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19	Valley formation and methane precipitation rates on Titan. Journal of Geophysical Research, 2006, 111, .	3.3	104
20	New insights into the mechanics of fluvial bedrock erosion through flume experiments and theory. Geomorphology, 2015, 244, 33-55.	1.1	104
21	Testing morphodynamic controls on the location and frequency of river avulsions on fans versus deltas: Huanghe (Yellow River), China. Geophysical Research Letters, 2014, 41, 7882-7890.	1.5	103
22	Incipient sediment motion across the river to debris-flow transition. Geology, 2014, 42, 191-194.	2.0	96
23	Deposits from Wave-Influenced Turbidity Currents: Pennsylvanian Minturn Formation, Colorado, U.S.A.. Journal of Sedimentary Research, 2008, 78, 480-498.	0.8	93
24	Fluvial features on Titan: Insights from morphology and modeling. Bulletin of the Geological Society of America, 2013, 125, 299-321.	1.6	93
25	Progressive incision of the Channeled Scablands by outburst floods. Nature, 2016, 538, 229-232.	13.7	92
26	A model for fire-induced sediment yield by dry ravel in steep landscapes. Journal of Geophysical Research, 2011, 116, .	3.3	85
27	Sedimentary processes of the Bagnold Dunes: Implications for the eolian rock record of Mars. Journal of Geophysical Research E: Planets, 2017, 122, 2544-2573.	1.5	83
28	Evidence for plunging river plume deposits in the Pahrump Hills member of the Murray formation, Gale crater, Mars. Sedimentology, 2019, 66, 1768-1802.	1.6	80
29	Linking river-flood dynamics to hyperpycnal-plume deposits: Experiments, theory, and geological implications. Bulletin of the Geological Society of America, 2010, 122, 1389-1400.	1.6	79
30	Unraveling bed slope from relative roughness in initial sediment motion. Journal of Geophysical Research F: Earth Surface, 2015, 120, 474-489.	1.0	76
31	Experimental river delta size set by multiple floods and backwater hydrodynamics. Science Advances, 2016, 2, e1501768.	4.7	72
32	The Seismic Signature of Debris Flows: Flow Mechanics and Early Warning at Montecito, California. Geophysical Research Letters, 2018, 45, 5528-5535.	1.5	69
33	A Mechanistic Model of Waterfall Plunge Pool Erosion into Bedrock. Journal of Geophysical Research F: Earth Surface, 2017, 122, 2079-2104.	1.0	68
34	Fault-zone controls on the spatial distribution of slow-moving landslides. Bulletin of the Geological Society of America, 2013, 125, 473-489.	1.6	67
35	Experimental evidence for fluvial bedrock incision by suspended and bedload sediment. Geology, 2014, 42, 523-526.	2.0	67
36	The role of waterfalls and knickzones in controlling the style and pace of landscape adjustment in the western San Gabriel Mountains, California. Bulletin of the Geological Society of America, 2015, 127, 539-559.	1.6	67

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37	Amphitheater-headed canyons formed by megaflooding at Malad Gorge, Idaho. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 57-62.	3.3	66
38	Similarity of stream width distributions across headwater systems. Nature Communications, 2018, 9, 610.	5.8	64
39	Landslide velocity, thickness, and rheology from remote sensing: La ClapiÃ¨re landslide, France. Geophysical Research Letters, 2013, 40, 4299-4304.	1.5	60
40	The grain size gap and abrupt gravelâ€sand transitions in rivers due to suspension fallout. Geophysical Research Letters, 2016, 43, 3777-3785.	1.5	60
41	Morphologic Diversity of Martian Ripples: Implications for Largeâ€Ripple Formation. Geophysical Research Letters, 2018, 45, 10,229.	1.5	59
42	Quantitative bounds on morphodynamics and implications for reading the sedimentary record. Nature Communications, 2014, 5, 3298.	5.8	57
43	Avulsion cycles and their stratigraphic signature on an experimental backwaterâ€controlled delta. Journal of Geophysical Research F: Earth Surface, 2016, 121, 1651-1675.	1.0	56
44	Time scale bias in erosion rates of glaciated landscapes. Science Advances, 2016, 2, e1600204.	4.7	56
45	Mud in rivers transported as flocculated and suspended bed material. Nature Geoscience, 2020, 13, 566-570.	5.4	55
46	Particle friction angles in steep mountain channels. Journal of Geophysical Research F: Earth Surface, 2015, 120, 242-259.	1.0	53
47	Model predictions of long-lived storage of organic carbon in river deposits. Earth Surface Dynamics, 2017, 5, 711-730.	1.0	53
48	Experimental study on coarse grain saltation dynamics in bedrock channels. Journal of Geophysical Research F: Earth Surface, 2013, 118, 1161-1176.	1.0	52
49	Experimental evidence that ooid size reflects a dynamic equilibrium between rapid precipitation and abrasion rates. Earth and Planetary Science Letters, 2017, 468, 112-118.	1.8	52
50	Vegetation and wildfire controls on sediment yield in bedrock landscapes. Geophysical Research Letters, 2013, 40, 1093-1097.	1.5	51
51	Knickpoint formation, rapid propagation, and landscape response following coastal cliff retreat at the last interglacial sea-level highstand: Kaua'i, Hawai'i. Bulletin of the Geological Society of America, 2014, 126, 925-942.	1.6	51
52	A physical model of the highâ€frequency seismic signal generated by debris flows. Earth Surface Processes and Landforms, 2019, 44, 2529-2543.	1.2	51
53	Sediment transport and topographic evolution of a coupled river and river plume system: An experimental and numerical study. Journal of Geophysical Research F: Earth Surface, 2014, 119, 1263-1282.	1.0	50
54	Formation of sinuous ridges by inversion of river-channel belts in Utah, USA, with implications for Mars. Icarus, 2019, 332, 92-110.	1.1	50

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55	Selfâ€formed waterfall plunge pools in homogeneous rock. Geophysical Research Letters, 2017, 44, 200-208.	1.5	49
56	Enhanced runout and erosion by overland flow at low pressure and sub-freezing conditions: Experiments and application to Mars. Icarus, 2011, 211, 443-457.	1.1	48
57	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.	1.0	48
58	Abrupt drainage basin reorganization following a Pleistocene river capture. Nature Communications, 2018, 9, 3756.	5.8	45
59	Numerical simulations of bedrock valley evolution by meandering rivers with variable bank material. Journal of Geophysical Research F: Earth Surface, 2014, 119, 927-950.	1.0	44
60	Particle transport mechanics and induced seismic noise in steep flume experiments with accelerometerâ€embedded tracers. Earth Surface Processes and Landforms, 2019, 44, 219-241.	1.2	44
61	Active Ooid Growth Driven By Sediment Transport in a High-Energy Shoal, Little Ambergris Cay, Turks and Caicos Islands. Journal of Sedimentary Research, 2018, 88, 1132-1151.	0.8	43
62	Low-gradient, single-threaded rivers prior to greening of the continents. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 11652-11657.	3.3	42
63	High-Density Suspensions Formed Under Waves. Journal of Sedimentary Research, 2005, 75, 386-397.	0.8	40
64	Hydrodynamics of steep streams with planar coarseâ€grained beds: Turbulence, flow resistance, and implications for sediment transport. Water Resources Research, 2017, 53, 2240-2263.	1.7	39
65	Origin of a Preferential Avulsion Node on Lowland River Deltas. Geophysical Research Letters, 2019, 46, 4267-4277.	1.5	39
66	Stratigraphy of Aeolis Dorsa, Mars: Stratigraphic context of the great river deposits. Icarus, 2015, 253, 223-242.	1.1	38
67	Direct measurements of lift and drag on shallowly submerged cobbles in steep streams: Implications for flow resistance and sediment transport. Water Resources Research, 2017, 53, 7607-7629.	1.7	38
68	Accelerated river avulsion frequency on lowland deltas due to sea-level rise. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 17584-17590.	3.3	38
69	What sets the size of current ripples?. Geology, 2017, 45, 243-246.	2.0	37
70	Slope, grain size, and roughness controls on dry sediment transport and storage on steep hillslopes. Journal of Geophysical Research F: Earth Surface, 2017, 122, 941-960.	1.0	37
71	Sediment storage by vegetation in steep bedrock landscapes: Theory, experiments, and implications for postfire sediment yield. Journal of Geophysical Research F: Earth Surface, 2013, 118, 1147-1160.	1.0	36
72	Origin of giant wave ripples in snowball Earth cap carbonate. Geology, 2012, 40, 827-830.	2.0	35

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73	Model for the Formation of Singleâ€Thread Rivers in Barren Landscapes and Implications for Preâ€Silurian and Martian Fluvial Deposits. Journal of Geophysical Research F: Earth Surface, 2019, 124, 2757-2777.	1.0	35
74	Canyon formation constraints on the discharge of catastrophic outburst floods of Earth and Mars. Journal of Geophysical Research E: Planets, 2016, 121, 1232-1263.	1.5	34
75	Dry sediment loading of headwater channels fuels post-wildfire debris flows in bedrock landscapes. Geology, 2020, 48, 189-193.	2.0	34
76	Self-formed bedrock waterfalls. Nature, 2019, 567, 229-233.	13.7	33
77	Entrainment and suspension of sand and gravel. Earth Surface Dynamics, 2020, 8, 485-504.	1.0	32
78	Erosional surfaces in the Upper Cretaceous Castlegate Sandstone (Utah, USA): Sequence boundaries or autogenic scour from backwater hydrodynamics?. Geology, 2018, 46, 707-710.	2.0	31
79	Transient Reactivation of a Deepâ€Seated Landslide by Undrained Loading Captured With Repeat Airborne and Terrestrial Lidar. Geophysical Research Letters, 2018, 45, 4841-4850.	1.5	30
80	Modeling Deltaic Lobeâ€Building Cycles and Channel Avulsions for the Yellow River Delta, China. Journal of Geophysical Research F: Earth Surface, 2019, 124, 2438-2462.	1.0	30
81	Autogenic Erosional Surfaces in Fluvio-deltaic Stratigraphy from Floods, Avulsions, and Backwater Hydrodynamics. Journal of Sedimentary Research, 2019, 89, 815-832.	0.8	29
82	Early plant organics increased global terrestrial mud deposition through enhanced flocculation. Science, 2021, 371, 526-529.	6.0	28
83	Turbulent structure of high-density suspensions formed under waves. Journal of Geophysical Research, 2004, 109, .	3.3	27
84	What controls channel form in steep mountain streams?. Geophysical Research Letters, 2017, 44, 7245-7255.	1.5	27
85	Degradation of 100â€mâ€Scale Rocky Ejecta Craters at the InSight Landing Site on Mars and Implications for Surface Processes and Erosion Rates in the Hesperian and Amazonian. Journal of Geophysical Research E: Planets, 2018, 123, 2732-2759.	1.5	27
86	Timescales of fluvial activity and intermittency in Milna Crater, Mars. Icarus, 2014, 241, 130-147.	1.1	26
87	Universal relation with regime transition for sediment transport in fine-grained rivers. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 171-176.	3.3	26
88	The Origin of Carbonate Mud. Geophysical Research Letters, 2019, 46, 2696-2703.	1.5	24
89	Decreasing Landslide Erosion on Steeper Slopes in Soilâ€Mantled Landscapes. Geophysical Research Letters, 2020, 47, e2020GL087505.	1.5	24
90	Sediment transport through selfâ€adjusting, bedrockâ€walled waterfall plunge pools. Journal of Geophysical Research F: Earth Surface, 2016, 121, 939-963.	1.0	23

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91	Were Aqueous Ripples on Mars Formed by Flowing Brines?. , 2012, , 139-150.		23
92	Where rivers jump course. Science, 2022, 376, 987-990.	6.0	22
93	An Evolving Understanding of Enigmatic Large Ripples on Mars. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006729.	1.5	21
94	Climate-change versus landslide origin of fill terraces in a rapidly eroding bedrock landscape: San Gabriel River, California. Bulletin of the Geological Society of America, 2016, 128, 1228-1248.	1.6	19
95	Orbital and Inâ€Situ Investigation of Periodic Bedrock Ridges in Glen Torridon, Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	18
96	Amplification of downstream flood stage due to damming of fine-grained rivers. Nature Communications, 2022, 13, .	5.8	18
97	Force chains as the link between particle and bulk friction angles in granular material. Geophysical Research Letters, 2014, 41, 8862-8869.	1.5	15
98	Flow resistance, sediment transport, and bedform development in a steep gravel-bedded river flume. Geomorphology, 2018, 320, 111-126.	1.1	15
99	Fluvial Sinuous Ridges of the Morrison Formation, USA: Meandering, Scarp Retreat, and Implications for Mars. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006470.	1.5	15
100	Debris flow initiation from ravel-filled channel bed failure following wildfire in a bedrock landscape with limited sediment supply. Bulletin of the Geological Society of America, 2021, 133, 2079-2096.	1.6	15
101	Longâ€Term Storage and Ageâ€Biased Export of Fluvial Organic Carbon: Field Evidence From West Iceland. Geochemistry, Geophysics, Geosystems, 2020, 21, e2019GC008632.	1.0	14
102	Constraining the Timespan of Fluvial Activity From the Intermittency of Sediment Transport on Earth and Mars. Geophysical Research Letters, 2021, 48, e2021GL092598.	1.5	13
103	Hydraulics of floods upstream of horseshoe canyons and waterfalls. Journal of Geophysical Research F: Earth Surface, 2015, 120, 1227-1250.	1.0	12
104	Organic carbon burial by river meandering partially offsets bank erosion carbon fluxes in a discontinuous permafrost floodplain. Earth Surface Dynamics, 2022, 10, 421-435.	1.0	12
105	Deciphering boulder mobility and erosion from cosmogenic nuclide exposure dating. Journal of Geophysical Research F: Earth Surface, 2013, 118, 184-197.	1.0	11
106	The Role of Threeâ€Dimensional Boundary Stresses in Limiting the Occurrence and Size of Experimental Landslides. Journal of Geophysical Research F: Earth Surface, 2018, 123, 46-65.	1.0	11
107	Formation of waterfalls by intermittent burial of active faults. Bulletin of the Geological Society of America, 2018, 130, 522-536.	1.6	11
108	Climateâ€Change Controls on River Delta Avulsion Location and Frequency. Journal of Geophysical Research F: Earth Surface, 2021, 126, e2020JF005950.	1.0	11

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109	A vector-based method for bank-material tracking in coupled models of meandering and landscape evolution. Journal of Geophysical Research F: Earth Surface, 2013, 118, 2421-2437.	1.0	10
110	Flood Variability Determines the Location of Lobeâ€Scale Avulsions on Deltas: Madagascar. Geophysical Research Letters, 2020, 47, e2020GL088797.	1.5	10
111	Ooid Cortical Stratigraphy Reveals Common Histories of Individual Coâ€occurring Sedimentary Grains. Journal of Geophysical Research F: Earth Surface, 2020, 125, e2019JF005452.	1.0	10
112	Intense Granular Sheetflow in Steep Streams. Geophysical Research Letters, 2018, 45, 5509-5517.	1.5	9
113	Organic sulfur fluxes and geomorphic control of sulfur isotope ratios in rivers. Earth and Planetary Science Letters, 2021, 562, 116838.	1.8	9
114	Similar curvature-to-width ratios for channels and channel belts: Implications for paleo-hydraulics of fluvial ridges on Mars. Geology, 2021, 49, 837-841.	2.0	8
115	Suspended Sedimentâ€Induced Stratification Inferred From Concentration and Velocity Profile Measurements in the Lower Yellow River, China. Water Resources Research, 2022, 58, e2020WR027192.	1.7	7
116	Coal fly ash is a major carbon flux in the Chang Jiang (Yangtze River) basin. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	7
117	Ancient Winds, Waves, and Atmosphere in Gale Crater, Mars, Inferred From Sedimentary Structures and Wave Modeling. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	7
118	Effect of Seaâ€Level Change on River Avulsions and Stratigraphy for an Experimental Lowland Delta. Journal of Geophysical Research F: Earth Surface, 2022, 127, .	1.0	5
119	Cosmogenic 3He production rate in ilmenite and the redistribution of spallation 3He in fine-grained minerals. Geochimica Et Cosmochimica Acta, 2019, 265, 19-31.	1.6	4
120	Mass balance controls on sediment scour and bedrock erosion in waterfall plunge pools. Geology, 2021, 49, 1084-1088.	2.0	4
121	Glacial isostatic adjustment directed incision of the Channeled Scabland by Ice Age megafloods. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	4
122	Spatial Patterns of Deltaic Deposition/Erosion Revealed by Streaklines Extracted From Remotelyâ€Sensed Suspended Sediment Concentration. Geophysical Research Letters, 2022, 49, .	1.5	4
123	Impact of River Channel Lateral Migration on Microbial Communities across a Discontinuous Permafrost Floodplain. Applied and Environmental Microbiology, 2021, 87, e0133921.	1.4	3
124	Evaluating the role of volatiles in bedrock chute formation on the Moon and Mars. Icarus, 2022, 373, 114774.	1.1	3
125	Formation of low-gradient bedrock chutes by dry rockfall on planetary surfaces. Geology, 2022, 50, 174-178.	2.0	3
126	Morphodynamic Modeling of River-Dominated Deltas: A Review and Future Perspectives. , 2022, , 110-140.		2

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127	Canyon Wall and Floor Debris Deposits in Aeolis Mons, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	2
128	Narrower Paleoâ€canyons Downsize Megafloods. Geophysical Research Letters, 0, , .	1.5	2
129	The Oligoceneâ€Miocene Guadalopeâ€Matarranya Fan, Spain, as an Analog for Longâ€Lived, Ridgeâ€Bearing Megafans on Mars. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006993.	1.5	1