

Peter Lehmann

List of Publications by Year in descending order

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92
papers

4,468
citations

109321

35
h-index

110387

64
g-index

114
all docs

114
docs citations

114
times ranked

3991
citing authors

#	ARTICLE	IF	CITATIONS
1	Characteristic lengths affecting evaporative drying of porous media. <i>Physical Review E</i> , 2008, 77, 056309.	2.1	358
2	Advances in Soil Evaporation Physics – A Review. <i>Vadose Zone Journal</i> , 2013, 12, 1-16.	2.2	286
3	Quantifying the role of vegetation in slope stability: A case study in Tuscany (Italy). <i>Ecological Engineering</i> , 2010, 36, 285-291.	3.6	209
4	Quantifying lateral root reinforcement in steep slopes – from a bundle of roots to tree stands. <i>Earth Surface Processes and Landforms</i> , 2010, 35, 354-367.	2.5	199
5	Drying front and water content dynamics during evaporation from sand delineated by neutron radiography. <i>Water Resources Research</i> , 2008, 44, .	4.2	171
6	Prediction of capillary hysteresis in a porous material using lattice-Boltzmann methods and comparison to experimental data and a morphological pore network model. <i>Advances in Water Resources</i> , 2008, 31, 1151-1173.	3.8	164
7	Coupling of evaporative fluxes from drying porous surfaces with air boundary layer: Characteristics of evaporation from discrete pores. <i>Water Resources Research</i> , 2012, 48, .	4.2	152
8	Rainfall threshold for hillslope outflow: an emergent property of flow pathway connectivity. <i>Hydrology and Earth System Sciences</i> , 2007, 11, 1047-1063.	4.9	148
9	Critical evaluation of enhancement factors for vapor transport through unsaturated porous media. <i>Water Resources Research</i> , 2009, 45, .	4.2	128
10	Monitoring and prediction in early warning systems for rapid mass movements. <i>Natural Hazards and Earth System Sciences</i> , 2015, 15, 905-917.	3.6	107
11	Characteristics of evaporation from partially wettable porous media. <i>Water Resources Research</i> , 2009, 45, .	4.2	94
12	Unsaturated water flow across soil aggregate contacts. <i>Advances in Water Resources</i> , 2008, 31, 1221-1232.	3.8	93
13	Evaporation rates across a convective air boundary layer are dominated by diffusion. <i>Water Resources Research</i> , 2013, 49, 1602-1610.	4.2	92
14	Evaporation and capillary coupling across vertical textural contrasts in porous media. <i>Physical Review E</i> , 2009, 80, 046318.	2.1	90
15	Tomographical Imaging and Mathematical Description of Porous Media Used for the Prediction of Fluid Distribution. <i>Vadose Zone Journal</i> , 2006, 5, 80-97.	2.2	85
16	Assessing the potential of soil moisture measurements for regional landslide early warning. <i>Landslides</i> , 2020, 17, 1881-1896.	5.4	84
17	Effect of hysteresis on water flow in a sand column with a fluctuating capillary fringe. <i>Journal of Contaminant Hydrology</i> , 1998, 33, 81-100.	3.3	83
18	Hydromechanical triggering of landslides: From progressive local failures to mass release. <i>Water Resources Research</i> , 2012, 48, .	4.2	82

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19	Evaporation from layered porous media. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	79
20	Effects of hydrophobic layers on evaporation from porous media. <i>Geophysical Research Letters</i> , 2008, 35, .	4.0	78
21	Evolution of soil wetting patterns preceding a hydrologically induced landslide inferred from electrical resistivity survey and point measurements of volumetric water content and pore water pressure. <i>Water Resources Research</i> , 2013, 49, 7992-8004.	4.2	75
22	Surface Evaporative Capacitance: How Soil Type and Rainfall Characteristics Affect Globalâ€Scale Surface Evaporation. <i>Water Resources Research</i> , 2019, 55, 519-539.	4.2	66
23	Fiber bundle model for multiscale modeling of hydromechanical triggering of shallow landslides. <i>Water Resources Research</i> , 2009, 45, .	4.2	65
24	Liquid-phase continuity and solute concentration dynamics during evaporation from porous media: Pore-scale processes near vaporization surface. <i>Physical Review E</i> , 2010, 81, 046308.	2.1	64
25	Spatial statistical modeling of shallow landslidesâ€Validating predictions for different landslide inventories and rainfall events. <i>Geomorphology</i> , 2011, 133, 11-22.	2.6	64
26	Effects of stomata clustering on leaf gas exchange. <i>New Phytologist</i> , 2015, 207, 1015-1025.	7.3	64
27	Soil Texture Effects on Surface Resistance to Bareâ€Soil Evaporation. <i>Geophysical Research Letters</i> , 2018, 45, 10,398.	4.0	59
28	Rainfall-triggered shallow landslides at catchment scale: Threshold mechanics-based modeling for abruptness and localization. <i>Water Resources Research</i> , 2013, 49, 6266-6285.	4.2	56
29	Impact of geometrical properties on permeability and fluid phase distribution in porous media. <i>Advances in Water Resources</i> , 2008, 31, 1188-1204.	3.8	53
30	Effects of soil spatial variability at the hillslope and catchment scales on characteristics of rainfallâ€induced landslides. <i>Water Resources Research</i> , 2016, 52, 1781-1799.	4.2	51
31	Linking rainfall-induced landslides with debris flows runout patterns towards catchment scale hazard assessment. <i>Geomorphology</i> , 2017, 280, 1-15.	2.6	49
32	Effects of rainfall spatial variability and intermittency on shallow landslide triggering patterns at a catchment scale. <i>Water Resources Research</i> , 2014, 50, 7780-7799.	4.2	45
33	Annual precipitation explains variability in dryland vegetation greenness globally but not locally. <i>Global Change Biology</i> , 2021, 27, 4367-4380.	9.5	44
34	Water flow between soil aggregates. <i>Transport in Porous Media</i> , 2007, 68, 219-236.	2.6	39
35	Evaporation suppression and energy balance of water reservoirs covered with self-assembling floating elements. <i>Hydrology and Earth System Sciences</i> , 2018, 22, 4015-4032.	4.9	38
36	Natural length scales define the range of applicability of the Richards equation for capillary flows. <i>Water Resources Research</i> , 2015, 51, 7130-7144.	4.2	37

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37	Drainage in heterogeneous sand columns with different geometric structures. <i>Advances in Water Resources</i> , 2008, 31, 1205-1220.	3.8	32
38	Vertical scanning white-light interference microscopy on curved microstructures. <i>Optics Letters</i> , 2010, 35, 1768.	3.3	30
39	Measuring the effect of structural connectivity on the water dynamics in heterogeneous porous media using speedy neutron tomography. <i>Advances in Water Resources</i> , 2008, 31, 1233-1241.	3.8	29
40	Effect of wetness patchiness on evaporation dynamics from drying porous surfaces. <i>Water Resources Research</i> , 2013, 49, 8250-8262.	4.2	29
41	Coherence scanning and phase imaging optical interference microscopy at the lateral resolution limit. <i>Optics Express</i> , 2018, 26, 7376.	3.4	29
42	Effect of water content on solute transport in a porous medium containing reactive micro-aggregates. <i>Journal of Contaminant Hydrology</i> , 1998, 33, 211-230.	3.3	28
43	Evaporation Suppression From Water Bodies Using Floating Covers: Laboratory Studies of Cover Type, Wind, and Radiation Effects. <i>Water Resources Research</i> , 2019, 55, 4839-4853.	4.2	28
44	Global Prediction of Soil Saturated Hydraulic Conductivity Using Random Forest in a Covariate-Based GeoTransfer Function (CoGTF) Framework. <i>Journal of Advances in Modeling Earth Systems</i> , 2021, 13, e2020MS002242.	3.8	28
45	Two approaches to modeling the initiation and development of rills in a man-made catchment. <i>Water Resources Research</i> , 2012, 48, .	4.2	26
46	From the pore scale to the lab scale: 3-D lab experiment and numerical simulation of drainage in heterogeneous porous media. <i>Advances in Water Resources</i> , 2008, 31, 1253-1268.	3.8	25
47	A Fractal Approach to Model Soil Structure and to Calculate Thermal Conductivity of Soils. <i>Transport in Porous Media</i> , 2003, 52, 313-332.	2.6	24
48	Linking rainfall-induced landslides with predictions of debris flow runout distances. <i>Landslides</i> , 2016, 13, 1097-1107.	5.4	23
49	Surface Evaporation in Arid Regions: Insights From Lysimeter Decadal Record and Global Application of a Surface Evaporation Capacitor (SEC) Model. <i>Geophysical Research Letters</i> , 2019, 46, 9648-9657.	4.0	23
50	SoilKsatDB: global database of soil saturated hydraulic conductivity measurements for geoscience applications. <i>Earth System Science Data</i> , 2021, 13, 1593-1612.	9.9	23
51	Effects of hydromechanical loading history and antecedent soil mechanical damage on shallow landslide triggering. <i>Journal of Geophysical Research F: Earth Surface</i> , 2015, 120, 1990-2015.	2.8	22
52	Drainage mechanisms in porous media: From piston-like invasion to formation of corner flow networks. <i>Water Resources Research</i> , 2016, 52, 8413-8436.	4.2	22
53	Deforestation Effects on Rainfall-Induced Shallow Landslides: Remote Sensing and Physically-Based Modelling. <i>Water Resources Research</i> , 2019, 55, 9962-9976.	4.2	22
54	Choice of Pedotransfer Functions Matters when Simulating Soil Water Balance Fluxes. <i>Journal of Advances in Modeling Earth Systems</i> , 2021, 13, e2020MS002404.	3.8	22

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55	Distribution of small seasonal reservoirs in semi-arid regions and associated evaporative losses. Environmental Research Communications, 2020, 2, 061002.	2.3	21
56	Clays Are Not Created Equal: How Clay Mineral Type Affects Soil Parameterization. Geophysical Research Letters, 2021, 48, e2021GL095311.	4.0	21
57	Rainfall Intensity Temporal Patterns Affect Shallow Landslide Triggering and Hazard Evolution. Geophysical Research Letters, 2020, 47, e2019GL085994.	4.0	20
58	Transfer characteristics of rectangular phase gratings in interference microscopy. Optics Letters, 2012, 37, 758.	3.3	19
59	3-D Optical Interference Microscopy at the Lateral Resolution. International Journal of Optomechatronics, 2014, 8, 231-241.	6.6	15
60	Physical Constraints for Improved Soil Hydraulic Parameter Estimation by Pedotransfer Functions. Water Resources Research, 2020, 56, e2019WR025963.	4.2	15
61	Modelling subsurface drainage pathways in an artificial catchment. Physics and Chemistry of the Earth, 2011, 36, 101-112.	2.9	14
62	3D nanoimprint for NIR Fabry-Pérot filter arrays: fabrication, characterization and comparison of different cavity designs. Applied Nanoscience (Switzerland), 2016, 6, 1127-1135.	3.1	14
63	Assessment of structural evolution of aggregated soil using neutron tomography. Water Resources Research, 2008, 44, .	4.2	13
64	Fiber-bundle model with time-dependent healing mechanisms to simulate progressive failure of snow. Physical Review E, 2018, 98, 023002.	2.1	12
65	Two-dimensional modelling of systematic surface height deviations in optical interference microscopy based on rigorous near field calculation. Journal of Modern Optics, 2020, 67, 963-973.	1.3	12
66	Hydraulic contacts controlling water flow across porous grains. Physical Review E, 2007, 76, 026311.	2.1	11
67	The formation of viscous limited saturation zones behind rapid drainage fronts in porous media. Water Resources Research, 2015, 51, 9862-9890.	4.2	11
68	Analysis of interference microscopy in the spatial frequency domain. JPhys Photonics, 2021, 3, 014006.	4.6	9
69	Global Mapping of Soil Water Characteristics Parameters” Fusing Curated Data with Machine Learning and Environmental Covariates. Remote Sensing, 2022, 14, 1947.	4.0	9
70	High-resolution fiber-coupled interferometric point sensor for micro- and nano-metrology. TM Technisches Messen, 2015, 82, 367-376.	0.7	8
71	Drainage dynamics controlled by corner flow: Application of the foam drainage equation. Water Resources Research, 2016, 52, 8402-8412.	4.2	8
72	Unstable Infiltration Experiments in Dry Porous Media. Vadose Zone Journal, 2017, 16, 1-13.	2.2	8

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73	Evaporation Suppression From Small Reservoirs Using Floating Coversâ€”Field Study and Modeling. <i>Water Resources Research</i> , 2021, 57, e2020WR028753.	4.2	8
74	Simulated or measured soil moisture: which one is adding more value to regional landslide early warning?. <i>Hydrology and Earth System Sciences</i> , 2021, 25, 4585-4610.	4.9	8
75	Three-Dimensional Transfer Functions of Interference Microscopes. <i>Metrology</i> , 2021, 1, 122-141.	1.5	8
76	Using a pore-scale model to quantify the effect of particle re-arrangement on pore structure and hydraulic properties. <i>Hydrological Processes</i> , 2007, 21, 989-997.	2.6	6
77	Capillary flows across layers and textural interfaces â€” Pathways and colloid transport considerations in unsaturated layered porous media. <i>Journal of Colloid and Interface Science</i> , 2017, 504, 294-304.	9.4	6
78	The foam drainage equation for drainage dynamics in unsaturated porous media. <i>Water Resources Research</i> , 2017, 53, 5706-5724.	4.2	6
79	High-speed laser interferometric distance sensor with reference mirror oscillating at ultrasonic frequencies. <i>TM Technisches Messen</i> , 2019, 86, 164-174.	0.7	6
80	Enhanced Rainfallâ€”Induced Shallow Landslide Activity Following Seismic Disturbanceâ€”From Triggering to Healing. <i>Journal of Geophysical Research F: Earth Surface</i> , 2021, 126, .	2.8	6
81	Threeâ€”dimensional transfer function of optical microscopes in reflection mode. <i>Journal of Microscopy</i> , 2021, 284, 45-55.	1.8	6
82	The Lasting Signatures of Past Landslides on Soil Stripping From Landscapes. <i>Water Resources Research</i> , 2021, 57, .	4.2	6
83	Dynamics of Fluid Interfaces and Flow and Transport across Material Interfaces in Porous Media-Modeling and Observations. <i>Vadose Zone Journal</i> , 2012, 11, vj2012.0105.	2.2	5
84	Limited role of soil texture in mediating natural vegetation response to rainfall anomalies. <i>Environmental Research Letters</i> , 2022, 17, 034012.	5.2	5
85	Load redistribution rules for progressive failure in shallow landslides: Threshold mechanical models. <i>Geophysical Research Letters</i> , 2017, 44, 228-235.	4.0	4
86	Outlier Elimination in Rough Surface Profilometry with Focus Variation Microscopy. <i>Metrology</i> , 2022, 2, 263-273.	1.5	4
87	Quantitative links between porous media structures and flow behavior across scales. <i>Advances in Water Resources</i> , 2008, 31, 1127-1128.	3.8	3
88	Comment on â€”Column-scale unsaturated hydraulic conductivity estimates in coarse-textured homogeneous and layered soils derived under steady-state evaporation from a water tableâ€”by M. Sadeghi, M. Tuller, M.R. Gohardoust and S.B. Jones. <i>Journal of Hydrology</i> , 2015, 529, 1274-1276.	5.4	3
89	A new form measurement system based on subaperture stitching with a line-scanning interferometer. <i>Advanced Optical Technologies</i> , 2016, 5, 415-422.	1.7	3
90	How Landslides Become Disasters. <i>Eos</i> , 2018, 99, .	0.1	2

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91	Special Section Guest Editorial: Speckle Metrology. Optical Engineering, 2016, 55, 121701.	1.0	1
92	Investigation of measurement data of low-coherence interferometry at tilted surfaces in the 3D spatial frequency domain. TM Technisches Messen, 2022, .	0.7	1