

T Le Borgne

List of Publications by Year in descending order

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105
papers

5,073
citations

61984

43
h-index

95266

68
g-index

108
all docs

108
docs citations

108
times ranked

2884
citing authors

#	ARTICLE	IF	CITATIONS
1	Sharp Transition to Strongly Anomalous Transport in Unsaturated Porous Media. <i>Geophysical Research Letters</i> , 2022, 49, e2021GL096280.	4.0	6
2	Pore-Scale Mechanisms for Spectral Induced Polarization of Calcite Precipitation Inferred from Geo-Electrical Millifluidics. <i>Environmental Science & Technology</i> , 2022, 56, 4998-5008.	10.0	15
3	Subsurface Mixing Dynamics Across the Salt-Freshwater Interface. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	3
4	Coupled electrohydrodynamic transport in rough fractures: a generalized lubrication theory. <i>Journal of Fluid Mechanics</i> , 2022, 942, .	3.4	2
5	The diffusing-velocity random walk: a spatial-Markov formulation of heterogeneous advection and diffusion. <i>Journal of Fluid Mechanics</i> , 2021, 910, .	3.4	8
6	Scalar Signatures of Chaotic Mixing in Porous Media. <i>Physical Review Letters</i> , 2021, 126, 034505.	7.8	16
7	The Lagrangian kinematics of three-dimensional Darcy flow. <i>Journal of Fluid Mechanics</i> , 2021, 918, .	3.4	5
8	Effective kinetics driven by dynamic concentration gradients under coupled transport and reaction. <i>Geochimica Et Cosmochimica Acta</i> , 2021, 306, 189-209.	3.9	4
9	The chemical continuous time random walk framework for upscaling transport limitations in fluid-solid reactions. <i>Advances in Water Resources</i> , 2021, 154, 103981.	3.8	4
10	GPR-inferred fracture aperture widening in response to a high-pressure tracer injection test at the Åspåq Hard Rock Laboratory, Sweden. <i>Engineering Geology</i> , 2021, 292, 106249.	6.3	3
11	Network-driven anomalous transport is a fundamental component of brain microvascular dysfunction. <i>Nature Communications</i> , 2021, 12, 7295.	12.8	22
12	Iron-oxidizer hotspots formed by intermittent oxidic-anoxic fluid mixing in fractured rocks. <i>Nature Geoscience</i> , 2020, 13, 149-155.	12.9	48
13	Enhanced and non-monotonic effective kinetics of solute pulses under Michaelis-Menten reactions. <i>Advances in Water Resources</i> , 2020, 146, 103739.	3.8	4
14	The impact of stretching-enhanced mixing and coalescence on reactivity in mixing-limited reactive flows. <i>Physics of Fluids</i> , 2020, 32, .	4.0	3
15	Continuous Dissolved Gas Tracing of Fracture-Matrix Exchanges. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL088944.	4.0	13
16	Stretching and folding sustain microscale chemical gradients in porous media. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 13359-13365.	7.1	32
17	Genome reconstruction reveals distinct assemblages of Gallionellaceae in surface and subsurface redox transition zones. <i>FEMS Microbiology Ecology</i> , 2020, 96, .	2.7	26
18	Velocity distributions, dispersion and stretching in three-dimensional porous media. <i>Journal of Fluid Mechanics</i> , 2020, 891, .	3.4	46

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19	Hydrodynamic Dispersion and Lamb Surfaces in Darcy Flow. <i>Transport in Porous Media</i> , 2019, 130, 903-922.	2.6	9
20	Mixing and Reactive Fronts in the Subsurface. <i>Reviews in Mineralogy and Geochemistry</i> , 2019, 85, 111-142.	4.8	43
21	Chaotic mixing in crystalline granular media. <i>Journal of Fluid Mechanics</i> , 2019, 871, 562-594.	3.4	23
22	Dipole and Convergent Single-Well Thermal Tracer Tests for Characterizing the Effect of Flow Configuration on Thermal Recovery. <i>Geosciences (Switzerland)</i> , 2019, 9, 440.	2.2	4
23	5. Mixing and Reactive Fronts in the Subsurface. , 2019, , 111-142.		2
24	Impact of small-scale saline tracer heterogeneity on electrical resistivity monitoring in fully and partially saturated porous media: Insights from geoelectrical milli-fluidic experiments. <i>Advances in Water Resources</i> , 2018, 113, 295-309.	3.8	28
25	Mixing lamellae in a shear flow. <i>Journal of Fluid Mechanics</i> , 2018, 838, .	3.4	19
26	Space-Group Symmetries Generate Chaotic Fluid Advection in Crystalline Granular Media. <i>Physical Review Letters</i> , 2018, 120, 024501.	7.8	21
27	Geoelectrical Signatures of Reactive Mixing: A Theoretical Assessment. <i>Geophysical Research Letters</i> , 2018, 45, 3489-3498.	4.0	6
28	OZCAR: The French Network of Critical Zone Observatories. <i>Vadose Zone Journal</i> , 2018, 17, 1-24.	2.2	126
29	Probabilistic inference of fracture-scale flow paths and aperture distribution from hydrogeophysically-monitored tracer tests. <i>Journal of Hydrology</i> , 2018, 567, 305-319.	5.4	8
30	Thermal Attenuation and Lag Time in Fractured Rock: Theory and Field Measurements From Joint Heat and Solute Tracer Tests. <i>Water Resources Research</i> , 2018, 54, 10,053.	4.2	26
31	Shear Flows Accelerate Mixing Dynamics in Hyporheic Zones and Hillslopes. <i>Geophysical Research Letters</i> , 2018, 45, 11,659.	4.0	18
32	Fluid deformation in random steady three-dimensional flow. <i>Journal of Fluid Mechanics</i> , 2018, 855, 770-803.	3.4	8
33	Evolution of solute blobs in heterogeneous porous media. <i>Journal of Fluid Mechanics</i> , 2018, 853, 621-646.	3.4	23
34	Scalar gradients in stirred mixtures and the deconstruction of random fields. <i>Journal of Fluid Mechanics</i> , 2017, 812, 578-610.	3.4	18
35	Enhanced reaction kinetics and reactive mixing scale dynamics in mixing fronts under shear flow for arbitrary Damköhler numbers. <i>Advances in Water Resources</i> , 2017, 100, 78-95.	3.8	46
36	Impact of saturation on dispersion and mixing in porous media: Photobleaching pulse injection experiments and shear-enhanced mixing model. <i>Water Resources Research</i> , 2017, 53, 1457-1472.	4.2	56

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37	Neutrally buoyant tracers in hydrogeophysics: Field demonstration in fractured rock. <i>Geophysical Research Letters</i> , 2017, 44, 3663-3671.	4.0	14
38	Anomalous transport in disordered fracture networks: Spatial Markov model for dispersion with variable injection modes. <i>Advances in Water Resources</i> , 2017, 106, 80-94.	3.8	59
39	Insights about transport mechanisms and fracture flow channeling from multi-scale observations of tracer dispersion in shallow fractured crystalline rock. <i>Journal of Contaminant Hydrology</i> , 2017, 206, 18-33.	3.3	27
40	Chaotic mixing in three-dimensional porous media. <i>Journal of Fluid Mechanics</i> , 2016, 803, 144-174.	3.4	45
41	Coupled continuous-time random walks for fluid stretching in two-dimensional heterogeneous media. <i>Physical Review E</i> , 2016, 94, 061102.	2.1	22
42	Random Walk Methods for Modeling Hydrodynamic Transport in Porous and Fractured Media from Pore to Reservoir Scale. <i>Transport in Porous Media</i> , 2016, 115, 345-385.	2.6	86
43	Heat as a tracer for understanding transport processes in fractured media: Theory and field assessment from multiscale thermal push-pull tracer tests. <i>Water Resources Research</i> , 2016, 52, 5442-5457.	4.2	51
44	Distributed temperature sensing as a downhole tool in hydrogeology. <i>Water Resources Research</i> , 2016, 52, 9259-9273.	4.2	91
45	Hydrogeophysical characterization of transport processes in fractured rock by combining push-pull and single-hole ground penetrating radar experiments. <i>Water Resources Research</i> , 2016, 52, 938-953.	4.2	30
46	Continuous time random walks for the evolution of Lagrangian velocities. <i>Physical Review Fluids</i> , 2016, 1, .	2.5	84
47	Electrical Resistivity Monitoring of Saline Tracer Fingering at Pore Scale under Partially Saturated Conditions. , 2016, , .		2
48	Scaling forms of particle densities for Lévy walks and strong anomalous diffusion. <i>Physical Review E</i> , 2015, 92, 032128.	2.1	15
49	Anomalous transport on regular fracture networks: Impact of conductivity heterogeneity and mixing at fracture intersections. <i>Physical Review E</i> , 2015, 92, 022148.	2.1	84
50	Pore-scale mechanisms for the enhancement of mixing in unsaturated porous media and implications for chemical reactions. <i>Geophysical Research Letters</i> , 2015, 42, 5316-5324.	4.0	79
51	Thermal-plume fibre optic tracking (T-POT) test for flow velocity measurement in groundwater boreholes. <i>Geoscientific Instrumentation, Methods and Data Systems</i> , 2015, 4, 197-202.	1.6	17
52	Contribution of the finite volume point dilution method for measurement of groundwater fluxes in a fractured aquifer. <i>Journal of Contaminant Hydrology</i> , 2015, 182, 244-255.	3.3	22
53	Challenges in modeling unstable two-phase flow experiments in porous micromodels. <i>Water Resources Research</i> , 2015, 51, 1381-1400.	4.2	112
54	Continuous time random walks for non-local radial solute transport. <i>Advances in Water Resources</i> , 2015, 82, 16-26.	3.8	25

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55	The lamellar description of mixing in porous media. <i>Journal of Fluid Mechanics</i> , 2015, 770, 458-498.	3.4	96
56	Impact of velocity correlation and distribution on transport in fractured media: Field evidence and theoretical model. <i>Water Resources Research</i> , 2015, 51, 940-959.	4.2	124
57	Active-distributed temperature sensing to continuously quantify vertical flow in boreholes. <i>Water Resources Research</i> , 2014, 50, 3706-3713.	4.2	59
58	Mixing and Reaction Kinetics in Porous Media: An Experimental Pore Scale Quantification. <i>Environmental Science & Technology</i> , 2014, 48, 508-516.	10.0	155
59	Hydrological behavior of a deep sub-vertical fault in crystalline basement and relationships with surrounding reservoirs. <i>Journal of Hydrology</i> , 2014, 509, 42-54.	5.4	48
60	Modeling preasymptotic transport in flows with significant inertial and trapping effects – The importance of velocity correlations and a spatial Markov model. <i>Advances in Water Resources</i> , 2014, 70, 89-103.	3.8	63
61	Temporal evolution of age data under transient pumping conditions. <i>Journal of Hydrology</i> , 2014, 511, 555-566.	5.4	20
62	Passive temperature tomography experiments to characterize transmissivity and connectivity of preferential flow paths in fractured media. <i>Journal of Hydrology</i> , 2014, 512, 549-562.	5.4	60
63	Impact of fluid deformation on mixing-induced chemical reactions in heterogeneous flows. <i>Geophysical Research Letters</i> , 2014, 41, 7898-7906.	4.0	59
64	Conditioning of stochastic 3-D fracture networks to hydrological and geophysical data. <i>Advances in Water Resources</i> , 2013, 62, 79-89.	3.8	46
65	Reaction chain modeling of denitrification reactions during a push-pull test. <i>Journal of Contaminant Hydrology</i> , 2013, 148, 1-11.	3.3	29
66	Flow Intermittency, Dispersion, and Correlated Continuous Time Random Walks in Porous Media. <i>Physical Review Letters</i> , 2013, 110, 184502.	7.8	184
67	Stretching, Coalescence, and Mixing in Porous Media. <i>Physical Review Letters</i> , 2013, 110, 204501.	7.8	117
68	Characterizing groundwater flow and heat transport in fractured rock using fiber-optic distributed temperature sensing. <i>Geophysical Research Letters</i> , 2013, 40, 2055-2059.	4.0	110
69	Inverse modeling of flow tomography experiments in fractured media. <i>Water Resources Research</i> , 2013, 49, 7255-7265.	4.2	32
70	Temporal and spatial scaling of hydraulic response to recharge in fractured aquifers: Insights from a frequency domain analysis. <i>Water Resources Research</i> , 2013, 49, 3007-3023.	4.2	68
71	Partitioning a regional groundwater flow system into shallow local and deep regional flow compartments. <i>Water Resources Research</i> , 2013, 49, 2274-2286.	4.2	78
72	Temporal scaling of groundwater discharge in dual and multicontinuum catchment models. <i>Water Resources Research</i> , 2013, 49, 8552-8564.	4.2	15

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73	Fracture imaging within a granitic rock aquifer using multiple-offset single-hole and cross-hole GPR reflection data. <i>Journal of Applied Geophysics</i> , 2012, 78, 123-132.	2.1	43
74	Effect of spatial concentration fluctuations on effective kinetics in diffusion–reaction systems. <i>Water Resources Research</i> , 2012, 48, .	4.2	23
75	Asymptotic dispersion for two-dimensional highly heterogeneous permeability fields under temporally fluctuating flow. <i>Water Resources Research</i> , 2012, 48, .	4.2	18
76	Time evolution of mixing in heterogeneous porous media. <i>Water Resources Research</i> , 2012, 48, .	4.2	45
77	Inferring transport characteristics in a fractured rock aquifer by combining single-hole ground-penetrating radar reflection monitoring and tracer test data. <i>Water Resources Research</i> , 2012, 48, .	4.2	40
78	Single-hole GPR reflection imaging of solute transport in a granitic aquifer. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	35
79	Effective pore-scale dispersion upscaling with a correlated continuous time random walk approach. <i>Water Resources Research</i> , 2011, 47, .	4.2	75
80	Hypermixing in linear shear flow. <i>Water Resources Research</i> , 2011, 47, .	4.2	26
81	Mixing, spreading and reaction in heterogeneous media: A brief review. <i>Journal of Contaminant Hydrology</i> , 2011, 120-121, 1-17.	3.3	407
82	A methodology for using borehole temperature-depth profiles under ambient, single and cross-borehole pumping conditions to estimate fracture hydraulic properties. <i>Journal of Hydrology</i> , 2011, . .	5.4	17
83	Spatial Markov Model of Anomalous Transport Through Random Lattice Networks. <i>Physical Review Letters</i> , 2011, 107, 180602.	7.8	96
84	Persistence of incomplete mixing: A key to anomalous transport. <i>Physical Review E</i> , 2011, 84, 015301.	2.1	65
85	Anomalous kinetics in diffusion limited reactions linked to non-Gaussian concentration probability distribution function. <i>Journal of Chemical Physics</i> , 2011, 135, 174104.	3.0	18
86	Non-Fickian mixing: Temporal evolution of the scalar dissipation rate in heterogeneous porous media. <i>Advances in Water Resources</i> , 2010, 33, 1468-1475.	3.8	147
87	Anomalous mixing and reaction induced by superdiffusive nonlocal transport. <i>Physical Review E</i> , 2010, 82, 021119.	2.1	51
88	Multipoint concentration statistics for transport in stratified random velocity fields. <i>Physical Review E</i> , 2009, 80, 036306.	2.1	4
89	Concentration statistics for transport in random media. <i>Physical Review E</i> , 2009, 80, 010101.	2.1	19
90	Solute dispersion in channels with periodically varying apertures. <i>Physics of Fluids</i> , 2009, 21, .	4.0	57

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91	MuSET: A multiparameter and high precision sensor for downhole spontaneous electrical potential measurements. <i>Comptes Rendus - Geoscience</i> , 2009, 341, 957-964.	1.2	13
92	CoFIS and TELog: New downhole tools for characterizing dispersion processes in aquifers by single-well injection-withdrawal tracer tests. <i>Comptes Rendus - Geoscience</i> , 2009, 341, 965-975.	1.2	10
93	Spatial Markov processes for modeling Lagrangian particle dynamics in heterogeneous porous media. <i>Physical Review E</i> , 2008, 78, 026308.	2.1	89
94	Non-Fickian dispersion in porous media: 1. Multiscale measurements using single-well injection withdrawal tracer tests. <i>Water Resources Research</i> , 2008, 44, .	4.2	84
95	Non-Fickian dispersion in porous media: 2. Model validation from measurements at different scales. <i>Water Resources Research</i> , 2008, 44, .	4.2	69
96	Non-Fickian dispersion in porous media explained by heterogeneous microscale matrix diffusion. <i>Water Resources Research</i> , 2008, 44, .	4.2	82
97	Lagrangian Statistical Model for Transport in Highly Heterogeneous Velocity Fields. <i>Physical Review Letters</i> , 2008, 101, 090601.	7.8	173
98	Effective transport in random shear flows. <i>Physical Review E</i> , 2008, 77, 020101.	2.1	14
99	Characterization of the velocity field organization in heterogeneous media by conditional correlation. <i>Water Resources Research</i> , 2007, 43, .	4.2	44
100	Comparison of alternative methodologies for identifying and characterizing preferential flow paths in heterogeneous aquifers. <i>Journal of Hydrology</i> , 2007, 345, 134-148.	5.4	69
101	Assessment of preferential flow path connectivity and hydraulic properties at single-borehole and cross-borehole scales in a fractured aquifer. <i>Journal of Hydrology</i> , 2006, 328, 347-359.	5.4	134
102	Cross-Borehole Flowmeter Tests for Transient Heads in Heterogeneous Aquifers. <i>Ground Water</i> , 2006, 44, 444-452.	1.3	40
103	Equivalent mean flow models for fractured aquifers: Insights from a pumping tests scaling interpretation. <i>Water Resources Research</i> , 2004, 40, .	4.2	87
104	Electrical Signatures of Diffusion-Limited Mixing: Insights from a Milli-fluidic Tracer Experiment. <i>Transport in Porous Media</i> , 0, , 1.	2.6	2
105	Dilution of Reactive Plumes: Evolution of Concentration Statistics Under Diffusion and Nonlinear Reaction. <i>Transport in Porous Media</i> , 0, , 1.	2.6	1