Renaud Toussaint

List of Publications by Year
in descending order

137	3,499	147801	182427
papers	citations	31 h-index	51 g-index

160	160	160	2373
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Sink versus tilt penetration into shaken dry granular matter: The role of the foundation. Physical Review E, 2022, 105, 024903.	2.1	0
2	Visualization by optical fluorescence of two-phase flow in a three-dimensional porous medium. Journal of Physics: Conference Series, 2022, 2241, 012004.	0.4	1
3	Scaling analysis, correlation length and compaction estimates of natural and simulated stylolites. Journal of Structural Geology, 2022, 161, 104670.	2.3	6
4	Thermo-mechanical pain: the signaling role of heat dissipation in biological tissues. New Journal of Physics, 2021, 23, 023028.	2.9	2
5	The slip deficit on the North Anatolian Fault (Turkey) in the Marmara Sea: insights from paleoseismicity, seismicity and geodetic data. Mediterranean Geoscience Reviews, 2021, 3, 45-56.	1.2	3
6	Laboratory Landquakes: Insights From Experiments Into the Highâ€Frequency Seismic Signal Generated by Geophysical Granular Flows. Journal of Geophysical Research F: Earth Surface, 2021, 126, e2021JF006172.	2.8	8
7	Frictional Anisotropy of 3D-Printed Fault Surfaces. Frontiers in Earth Science, 2021, 9, .	1.8	2
8	Relative rates of fluid advection, elemental diffusion and replacement govern reaction front patterns. Earth and Planetary Science Letters, 2021, 565, 116950.	4.4	7
9	3D Printing in Geology and Geophysics: A New World of Opportunities in Research, Outreach, and Education. Frontiers in Earth Science, 2021, 9, .	1.8	2
10	Thermal dissipation as both the strength and weakness of matter. A material failure prediction by monitoring creep. Soft Matter, 2021, 17, 4143-4150.	2.7	3
11	Thermally activated intermittent dynamics of creeping crack fronts along disordered interfaces. Scientific Reports, 2021, 11, 20418.	3.3	4
12	Heat Emitting Damage in Skin: A Thermal Pathway for Mechanical Algesia. Frontiers in Neuroscience, 2021, 15, 780623.	2.8	1
13	Burst Dynamics, Upscaling and Dissipation of Slow Drainage in Porous Media. Frontiers in Physics, 2021, 9, .	2.1	7
14	Simulating Hydraulic Fracturing: Failure in Soft Versus Hard Rocks. Pure and Applied Geophysics, 2020, 177, 2771-2789.	1.9	1
15	Dissolution Phase Diagram in Radial Geometry. Frontiers in Physics, 2020, 8, .	2.1	9
16	How heat controls fracture: the thermodynamics of creeping and avalanching cracks. Soft Matter, 2020, 16, 9590-9602.	2.7	14
17	Fracturing and Porosity Channeling in Fluid Overpressure Zones in the Shallow Earthâ€™s Crust. Geofluids, 2020, 2020, 1-17.	0.7	7
18	Gravitational and Finiteâ€Size Effects On Pressure Saturation Curves During Drainage. Water Resources Research, 2020, 56, e2019WR026279.	4.2	8

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19	Intermittent Dynamics of Slow Drainage Experiments in Porous Media: Characterization Under Different Boundary Conditions. Frontiers in Physics, 2020, 7, .	2.1	8
20	Thermal weakening of cracks and brittle-ductile transition of matter: A phase model. Physical Review Materials, 2020, 4, .	2.4	8
21	â€™Oumuamua as a Cometary Fractal Aggregate: The â€œDust Bunnyâ€•Model. Astrophysical Journal Letters, 2020, 900, L22.	8.3	21
22	Compaction front and pore fluid pressurization in horizontally shaken drained granular layers. Physical Review Fluids, 2020, 5, .	2.5	5
23	Relations Between the Characteristics of Granular Column Collapses and Resultant Highâ€Frequency Seismic Signals. Journal of Geophysical Research F: Earth Surface, 2019, 124, 2987-3021.	2.8	16
24	Source Localization of Microseismic Emissions During Pneumatic Fracturing. Geophysical Research Letters, 2019, 46, 3726-3733.	4.0	8
25	Experimental Observation of Dissolution Finger Growth in Radial Geometry. Frontiers in Physics, 2019, 7, .	2.1	4
26	The Interstellar Object â€™Oumuamua as a Fractal Dust Aggregate. Astrophysical Journal Letters, 2019, 885, L41.	8.3	22
27	Variation of Elastic Energy Shows Reliable Signal of Upcoming Catastrophic Failure. Frontiers in Physics, 2019, 7, .	2.1	11
28	Thermally activated crack fronts propagating in pinning disorder: simultaneous brittle/creep behaviour depending on scale. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20170399.	3.4	5
29	Mechanical Instability of Sandy Soils Under Seismic Effect (Algeria). Advances in Science, Technology and Innovation, 2019, , 201-203.	0.4	0
30	Avalanches and extreme value statistics in interfacial crackling dynamics. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20170394.	3.4	7
31	Connectivity enhancement due to film flow in porous media. Physical Review Fluids, 2019, 4, .	2.5	17
32	Sinking during earthquakes: Critical acceleration criteria control drained soil liquefaction. Physical Review E, 2018, 97, 022905.	2.1	15
33	Elastic wave generated by granular impact on rough and erodible surfaces. Journal of Applied Physics, 2018, 123, 044901.	2.5	18
34	Pressure evolution and deformation of confined granular media during pneumatic fracturing. Physical Review E, 2018, 97, 012908.	2.1	14
35	The Al Hoceima earthquake sequence of 1994, 2004 and 2016: Stress transfer and poroelasticity in the Rif and Alboran Sea region. Geophysical Journal International, 2018, 212, 42-53.	2.4	32
36	Stylolites: A review. Journal of Structural Geology, 2018, 114, 163-195.	2.3	113

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37	Link Between the Dynamics of Granular Flows and the Generated Seismic Signal: Insights From Laboratory Experiments. Journal of Geophysical Research F: Earth Surface, 2018, 123, 1407-1429.	2.8	23
38	Dispersion in Fractures With Ramified Dissolution Patterns. Frontiers in Physics, 2018, 6, .	2.1	10
39	Microseismic Emissions During Pneumatic Fracturing: A Numerical Model to Explain the Experiments. Journal of Geophysical Research: Solid Earth, 2018, 123, 6922-6939.	3.4	4
40	Pattern formation of frictional fingers in a gravitational potential. Physical Review Fluids, 2018, 3, .	2.5	11
41	Onsager symmetry from mesoscopic time reversibility and the hydrodynamic dispersion tensor for coarse-grained systems. Physical Review E, 2017, 95, 022136.	2.1	4
42	Verification of a Dynamic Scaling for the Pair Correlation Function during the Slow Drainage of a Porous Medium. Physical Review Letters, 2017, 119, 154503.	7.8	14
43	The Combined Effect of Buoyancy and Excess Pore Pressure in Facilitating Soil Liquefaction. , 2017, , .		4
44	Pneumatic fractures in confined granular media. Physical Review E, 2017, 95, 062901.	2.1	11
45	Critical behavior in porous media flow. Europhysics Letters, 2017, 118, 14004.	2.0	17
46	Two-phase Lattice Boltzmann modelling of streaming potentials: influence of the airâ€“water interface on the electrokinetic coupling. Geophysical Journal International, 2017, 208, 1139-1156.	2.4	19
47	Editorial: Flow and Transformation in Porous Media. Frontiers in Physics, 2016, 4, .	2.1	1
48	Dynamic fracturing by successive coseismic loadings leads to pulverization in active fault zones. Journal of Geophysical Research: Solid Earth, 2016, 121, 2338-2360.	3.4	109
49	Note: Localization based on estimated source energy homogeneity. Review of Scientific Instruments, 2016, 87, 096101.	1.3	6
50	Geometrical evolution of interlocked rough slip surfaces: The role of normal stress. Earth and Planetary Science Letters, 2016, 443, 153-161.	4.4	33
51	How cracks are hot and cool: a burning issue for paper. Soft Matter, 2016, 12, 5563-5571.	2.7	14
52	Unsteady granular flows down an inclined plane. Physical Review E, 2016, 93, 042902.	2.1	23
53	Impact of stylolites on the mechanical strength of limestone. Tectonophysics, 2016, 690, 4-20.	2.2	55
54	Lattice Boltzmann modelling of streaming potentials: variations with salinity in monophasic conditions. Geophysical Journal International, 2016, 205, 648-664.	2.4	15

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55	Experimental validation of theoretical methods to estimate the energy radiated by elastic waves during an impact. Journal of Sound and Vibration, 2016, 362, 176-202.	3.9	22
56	Numerical approach to frictional fingers. Physical Review E, 2015, 92, 032203.	2.1	9
57	Impact of sample geometry on the measurement of pressureâ€saturation curves: Experiments and simulations. Water Resources Research, 2015, 51, 8900-8926.	4.2	27
58	Characterization of rockfalls from seismic signal: Insights from laboratory experiments. Journal of Geophysical Research: Solid Earth, 2015, 120, 7102-7137.	3.4	41
59	Dynamics of hydrofracturing and permeability evolution in layered reservoirs. Frontiers in Physics, 2015, 3, .	2.1	11
60	Bridging aero-fracture evolution with the characteristics of the acoustic emissions in a porous medium. Frontiers in Physics, 2015, 3, .	2.1	9
61	Invasion patterns during two-phase flow in deformable porous media. Frontiers in Physics, 2015, 3, .	2.1	20
62	Bubbles breaking the wall: Two-dimensional stress and stability analysis. Physical Review E, 2015, 91, 052204.	2.1	16
63	Influence of water pressure dynamics and fluid flow on the streamingâ€potential response for unsaturated conditions. Geophysical Prospecting, 2015, 63, 694-712.	1.9	29
64	Note: â€œLock-in accelerometryâ€•to follow sink dynamics in shaken granular matter. Review of Scientific Instruments, 2014, 85, 126101.	1.3	13
65	Direct velocity measurement of a turbulent shear flow in a planar Couette cell. Physical Review E, 2014, 89, 013026.	2.1	0
66	Self-induced seismicity due to fluid circulation along faults. Geophysical Journal International, 2014, 196, 1544-1563.	2.4	27
67	Sedimentary stylolite networks and connectivity in limestone: Large-scale field observations and implications for structure evolution. Journal of Structural Geology, 2014, 63, 106-123.	2.3	46
68	Morphological analysis of stylolites for paleostress estimation in limestones. International Journal of Rock Mechanics and Minings Sciences, 2014, 67, 212-225.	5.8	31
69	The importance of fracture-healing on the deformation of fluid-filled layered systems. Journal of Structural Geology, 2014, 67, 94-106.	2.3	25
70	Dynamic Development of Hydrofracture. Pure and Applied Geophysics, 2013, 170, 1685-1703.	1.9	31
71	Flow regime associated with vertical secondary migration. Marine and Petroleum Geology, 2013, 45, 150-158.	3.3	22
72	Non-Gaussian Nature of Fracture and the Survival of Fat-Tail Exponents. Physical Review Letters, 2013, 110, 145501.	7.8	28

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73	Localization of Shear in Saturated Granular Media: Insights from a Multi-Scaled Granular-Fluid Model. , 2013, , .		1
74	Influence of asperities on fluid and thermal flow in a fracture: A coupled lattice Boltzmann study. Journal of Geophysical Research: Solid Earth, 2013, 118, 3394-3407.	3.4	23
75	A General Criterion for Liquefaction in Granular Layers with Heterogeneous Pore Pressure. , 2013, , .		4
76	Performance of Image Correlation Techniques for Landslide Displacement Monitoring. , 2013, , 217-226.		1
77	Dynamic aerofracture of dense granular packings. Physical Review E, 2012, 86, 061315.	2.1	29
78	Interplay of seismic and aseismic deformations during earthquake swarms: An experimental approach. Earth and Planetary Science Letters, 2012, 331-332, 215-223.	4.4	21
79	Modelling of stylolite geometries and stress scaling. Earth and Planetary Science Letters, 2012, 341-344, 104-113.	4.4	47
80	Upper bound on stylolite roughness as indicator for amount of dissolution. Earth and Planetary Science Letters, 2012, 337-338, 186-196.	4.4	30
81	Family-Vicsek scaling of detachment fronts in granular Rayleigh-Taylor instabilities during sedimentating granular/fluid flows. European Physical Journal: Special Topics, 2012, 204, 27-40.	2.6	19
82	Modeling the growth of stylolites in sedimentary rocks. Journal of Geophysical Research, 2012, 117, .	3.3	27
83	An experimental study of secondary oil migration in a three-dimensional tilted porous medium. AAPG Bulletin, 2012, 96, 773-788.	1.5	25
84	Two-Phase Flow: Structure, Upscaling, and Consequences for Macroscopic Transport Properties. Vadose Zone Journal, 2012, 11, vzj2011.0123.	2.2	48
85	Laboratory experiments on DNAPL gravity fingering in water-saturated porous media. International Journal of Multiphase Flow, 2012, 40, 83-92.	3.4	16
86	Correlation of multi-temporal ground-based optical images for landslide monitoring: Application, potential and limitations. ISPRS Journal of Photogrammetry and Remote Sensing, 2012, 70, 39-55.	11.1	168
87	Testing oil saturation distribution in migration paths using MRI. Journal of Petroleum Science and Engineering, 2012, 86-87, 237-245.	4.2	10
88	Characterization of major discontinuities from borehole cores of the black consolidated marl formation of Draix (French Alps). Hydrological Processes, 2012, 26, 2085-2094.	2.6	8
89	Fracture aperture reconstruction and determination of hydrological properties: a case study at Draix (French Alps). Hydrological Processes, 2012, 26, 2095-2105.	2.6	12
90	Downscaling of fracture energy during brittle creep experiments. Journal of Geophysical Research, 2011, 116, .	3.3	9

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91	Hydraulic transmissivity and heat exchange efficiency of open fractures: a model based on lowpass filtered apertures. Geophysical Journal International, 2011, 186, 1064-1072.	2.4	18
92	Influence of Viscous Fingering on Dynamic Saturationâ€“Pressure Curves in Porous Media. Transport in Porous Media, 2011, 86, 305-324.	2.6	53
93	The Mechanical Coupling of Fluid-Filled Granular Material Under Shear. Pure and Applied Geophysics, 2011, 168, 2289-2323.	1.9	65
94	Average crack-front velocity during subcritical fracture propagation in a heterogeneous medium. Physical Review E, 2011, 84, 036104.	2.1	33
95	Local dynamics of a randomly pinned crack front during creep and forced propagation: An experimental study. Physical Review E, 2011, 83, 046108.	2.1	53
96	Sedimentation instabilities: Impact of the fluid compressibility and viscosity. Physical Review E, 2010, 82, 051302.	2.1	30
97	Effects of Pressure Oscillations on Drainage in an Elastic Porous Medium. Transport in Porous Media, 2010, 84, 569-585.	2.6	14
98	Size invariance of the granular Rayleigh-Taylor instability. Physical Review E, 2010, 81, 041308.	2.1	21
99	Anisotropic scaling of tectonic stylolites: A fossilized signature of the stress field?. Journal of Geophysical Research, 2010, 115, .	3.3	30
100	Pore pressure evolution in deforming granular material: A general formulation and the infinitely stiff approximation. Journal of Geophysical Research, 2010, 115, .	3.3	55
101	Hydrothermal coupling in a self-affine rough fracture. Physical Review E, 2010, 82, 036317.	2.1	38
102	Mixing of a granular layer falling through a fluid. Physical Review E, 2010, 82, 011301.	2.1	31
103	Fracture roughness and thermal exchange: A case study at Soultz-sous-ForÃªts. Comptes Rendus - Geoscience, 2010, 342, 616-625.	1.2	42
104	Fracture roughness scaling: A case study on planar cracks. Europhysics Letters, 2010, 92, 44001.	2.0	53
105	Granular Rayleigh-Taylor instability. , 2009, , .		1
106	The influence of rock heterogeneity on the scaling properties of simulated and natural stylolites. Journal of Structural Geology, 2009, 31, 72-82.	2.3	43
107	Quake Catalogs from an Optical Monitoring of an Interfacial Crack Propagation. Pure and Applied Geophysics, 2009, 166, 777-799.	1.9	23
108	Does roughening of rock-fluid-rock interfaces emerge from a stress-induced instability?. European Physical Journal B, 2009, 67, 121-131.	1.5	13

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109	Stress sensitivity of stylolite morphology. Earth and Planetary Science Letters, 2009, 277, 394-398.	4.4	69
110	Steady-State Two-Phase Flow in Porous Media: Statistics and Transport Properties. Physical Review Letters, 2009, 102, 074502.	7.8	126
111	Granular Rayleigh-Taylor Instability. , 2009, , 577-586.		1
112	Quake Catalogs from an Optical Monitoring of an Interfacial Crack Propagation. , 2009, , 777-799.		0
113	Fracture morphology and viscous transport. International Journal of Rock Mechanics and Minings Sciences, 2008, 45, 422-430.	5.8	78
114	Coupled air/granular flow in a linear Hele-Shaw cell. Physical Review E, 2008, 77, 011301.	2.1	29
115	Decompaction and fluidization of a saturated and confined granular medium by injection of a viscous liquid or gas. Physical Review E, 2008, 78, 051302.	2.1	44
116	Revolving rivers in sandpiles: From continuous to intermittent flows. Physical Review E, 2008, 77, 031305.	2.1	10
117	Growth of stylolite teeth patterns depending on normal stress and finite compaction. Earth and Planetary Science Letters, 2007, 257, 582-595.	4.4	99
118	Experiments and simulations of a gravitational granular flow instability. Physical Review E, 2007, 76, 051306.	2.1	36
119	Granular Rayleigh-Taylor Instability: Experiments and Simulations. Physical Review Letters, 2007, 99, 048001.	7.8	72
120	Mean-field theory of localization in a fuse model. Physical Review E, 2006, 73, 046103.	2.1	11
121	Memory of fluctuating Brownian dipolar chains. Physical Review E, 2006, 74, 051405.	2.1	7
122	Local Waiting Time Fluctuations along a Randomly Pinned Crack Front. Physical Review Letters, 2006, 96, 045501.	7.8	139
123	Pattern formation during air injection into granular materials confined in a circular Hele-Shaw cell. Physical Review E, 2006, 74, 011301.	2.1	72
124	SELF-AFFINE SCALING DURING INTERFACIAL CRACK FRONT PROPAGATION. , 2006, , 49-59.		1
125	Interacting damage models mapped onto Ising and percolation models. Physical Review E, 2005, 71, 046127.	2.1	24
126	Influence of pore-scale disorder on viscous fingering during drainage. Europhysics Letters, 2005, 71, 583-589.	2.0	70

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127	Growth activity during fingering in a porous Hele-Shaw cell. Physical Review E, 2004, 70, 026301.	2.1	106
128	Dynamic Roughening and Fluctuations of Dipolar Chains. Physical Review Letters, 2004, 93, 108304.	7.8	30
129	Roughness of Stylolites: Implications of 3D High Resolution Topography Measurements. Physical Review Letters, 2004, 93, 238501.	7.8	60
130	Interaction model for magnetic holes in a ferrofluid layer. Physical Review E, 2004, 69, 011407.	2.1	25
131	Interactions of magnetic holes in ferrofluid layers. , 2004, , 151-155.		1
132	Self-Assembly and Dynamics of Magnetic Holes. NATO Science Series Series II, Mathematics, Physics and Chemistry, 2004, , 165-179.	0.1	2
133	Fracture of disordered solids in compression as a critical phenomenon. II. Model Hamiltonian for a population of interacting cracks. Physical Review E, 2002, 66, 036136.	2.1	16
134	Fracture of disordered solids in compression as a critical phenomenon. III. Analysis of the localization transition. Physical Review E, 2002, 66, 036137.	2.1	16
135	Fracture of disordered solids in compression as a critical phenomenon. I. Statistical mechanics formalism. Physical Review E, 2002, 66, 036135.	2.1	19
136	Thermodynamics of fiber bundles. Physica A: Statistical Mechanics and Its Applications, 2002, 312, 159-171.	2.6	24
137	Competing Gravitational and Viscous Effects in 3D Two-Phase Flow Investigated With a Table-Top Optical Scanner. Frontiers in Physics, 0, 10, .	2.1	0