Esteban Rougier

List of Publications by Year
in descending order

62 papers	1,959 citations	218677 26 h-index	276875 41 g-index
96 all docs	96 docs citations	96 times ranked	1333 citing authors

#	Article	IF	Citations
1	Validation of a three-dimensional Finite-Discrete Element Method using experimental results of the Split Hopkinson Pressure Bar test. International Journal of Rock Mechanics and Minings Sciences, 2014, 70, 101-108.	5.8	132
2	Fracture-permeability behavior of shale. Journal of Unconventional Oil and Gas Resources, 2015, 11, 27-43.	3.5	117
3	Numerical comparison of some explicit time integration schemes used in DEM, FEM/DEM and molecular dynamics. International Journal for Numerical Methods in Engineering, 2004, 61, 856-879.	2.8	110
4	Dynamics, Radiation, and Overall Energy Budget of Earthquake Rupture With Coseismic Offâ€Fault Damage. Journal of Geophysical Research: Solid Earth, 2019, 124, 11771-11801.	3.4	93
5	Understanding hydraulic fracturing: a multi-scale problem. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150426.	3.4	92
6	HOSS: an implementation of the combined finite-discrete element method. Computational Particle Mechanics, 2020, 7, 765-787.	3.0	77
7	Earthquake Damage Patterns Resolve Complex Rupture Processes. Geophysical Research Letters, 2018, 45, 10,279.	4.0	74
8	Predictive modeling of dynamic fracture growth in brittle materials with machine learning. Computational Materials Science, 2018, 148, 46-53.	3.0	66
9	MR linear contact detection algorithm. International Journal for Numerical Methods in Engineering, 2006, 66, 46-71.	2.8	64
10	A framework for grand scale parallelization of the combined finite discrete element method in 2d. Computational Particle Mechanics, 2014, 1, 307-319.	3.0	64
11	Learning to fail: Predicting fracture evolution in brittle material models using recurrent graph convolutional neural networks. Computational Materials Science, 2019, 162, 322-332.	3.0	58
12	Modeling of Stickâ€Slip Behavior in Sheared Granular Fault Gouge Using the Combined Finiteâ€Discrete Element Method. Journal of Geophysical Research: Solid Earth, 2018, 123, 5774-5792.	3.4	56
13	Simulation of Fracture Coalescence in Granite via the Combined Finiteâ€“Discrete Element Method. Rock Mechanics and Rock Engineering, 2019, 52, 3213-3227.	5.4	53
14	Highâ€stress triaxial directâ€shear fracturing of Utica shale and in situ Xâ€ray microtomography with permeability measurement. Journal of Geophysical Research: Solid Earth, 2016, 121, 5493-5508.	3.4	51
15	Branching of hydraulic cracks enabling permeability of gas or oil shale with closed natural fractures. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1532-1537.	7.1	49
16	FSIS: a novel fluidâ€“solid interaction solver for fracturing and fragmenting solids. Computational Particle Mechanics, 2020, 7, 789-805.	3.0	44
17	A generalized anisotropic deformation formulation for geomaterials. Computational Particle Mechanics, 2016, 3, 215-228.	3.0	43
18	A smooth contact algorithm for the combined finite discrete element method. Computational Particle Mechanics, 2020, 7, 807-821.	3.0	40

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19	Quantifying Topological Uncertainty in Fractured Systems using Graph Theory and Machine Learning. Scientific Reports, 2018, 8, 11665.	3.3	38
20	Simulation of discrete cracks driven by nearly incompressible fluid via 2D combined finiteâ€discrete element method. International Journal for Numerical and Analytical Methods in Geomechanics, 2019, 43, 1724-1743.	3.3	36
21	Reduced-order modeling through machine learning and graph-theoretic approaches for brittle fracture applications. Computational Materials Science, 2019, 157, 87-98.	3.0	33
22	Radionuclide Gas Transport through Nuclear Explosion-Generated Fracture Networks. Scientific Reports, 2015, 5, 18383.	3.3	32
23	From Stress Chains to Acoustic Emission. Physical Review Letters, 2019, 123, 048003.	7.8	32
24	The combined plastic and discrete fracture deformation framework for finiteâ€discrete element methods. International Journal for Numerical Methods in Engineering, 2020, 121, 1020-1035.	2.8	29
25	Constraints on burial depth and yield of the 25 May 2009 North Korean test from hydrodynamic simulations in a granite medium. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	28
26	Calibrating the stress-time curve of a combined finite-discrete element method to a Split Hopkinson Pressure Bar experiment. International Journal of Rock Mechanics and Minings Sciences, 2018, 106, 278-288.	5.8	27
27	Seismic source functions from freeâ€field ground motions recorded on SPE: Implications for source models of small, shallow explosions. Journal of Geophysical Research: Solid Earth, 2015, 120, 3459-3478.	3.4	26
28	A non-locking composite tetrahedron element for the combined finite discrete element method. Engineering Computations, 2016, 33, 1929-1956.	1.4	24
29	A mechanisms-based model for dynamic behavior and fracture of geomaterials. International Journal of Rock Mechanics and Minings Sciences, 2014, 72, 277-282.	5.8	21
30	Modeling earthquakes with off-fault damage using the combined finite-discrete element method. Computational Particle Mechanics, 2020, 7, 1057-1072.	3.0	19
31	Simulation of crack induced nonlinear elasticity using the combined finite-discrete element method. Ultrasonics, 2019, 98, 51-61.	3.9	18
32	Impact Fracture and Fragmentation of Glass via the 3D Combined Finite-Discrete Element Method. Applied Sciences (Switzerland), 2021, 11, 2484.	2.5	17
33	A novel framework for elastoplastic behaviour of anisotropic solids. Computational Particle Mechanics, 2020, 7, 823-838.	3.0	16
34	Numerical analysis of flyer plate experiments in granite via the combined finiteâ€“discrete element method. Computational Particle Mechanics, 2020, 7, 1005-1016.	3.0	14
35	Shape selection menu for grand scale discontinua systems. Engineering Computations, 2004, 21, 343-359.	1.4	13
36	Phenomenology and Modeling of Explosionâ€Generated Shear Energy for the Source Physics Experiments. Bulletin of the Seismological Society of America, 2016, 106, 42-53.	2.3	12

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37	Fourier amplitude sensitivity test applied to dynamic combined finiteâ€discrete element methodsâ€“based simulations. International Journal for Numerical and Analytical Methods in Geomechanics, 2019, 43, 30-44.	3.3	12
38	Discontinuities in effective permeability due to fracture percolation. Mechanics of Materials, 2018, 119, 25-33.	3.2	11
39	Surrogate Models for Estimating Failure in Brittle and Quasi-Brittle Materials. Applied Sciences (Switzerland), 2019, 9, 2706.	2.5	11
40	Simulation of mixed-mode fracture using the combined finiteâ€“discrete element method. Computational Particle Mechanics, 2020, 7, 1047-1055.	3.0	10
41	Statistically informed upscaling of damage evolution in brittle materials. Theoretical and Applied Fracture Mechanics, 2019, 102, 210-221.	4.7	9
42	Distributed intelligence and the equivalence of matter and information. Computational Particle Mechanics, 2020, 7, 1073-1080.	3.0	8
43	Benchmarking Numerical Methods for Impact and Cratering Applications. Applied Sciences (Switzerland), 2021, 11, 2504.	2.5	8
44	Lagrangianâ€based Simulations of Hypervelocity Impact Experiments on Mars Regolith Proxy. Geophysical Research Letters, 2020, 47, e2020GL087393.	4.0	7
45	Scale bridging damage model for quasi-brittle metals informed with crack evolution statistics. Journal of the Mechanics and Physics of Solids, 2020, 138, 103921.	4.8	7
46	HOSS. , 2013, , 97-104.		6
47	Apparent Explosion Moments fromRgWaves Recorded on SPE. Bulletin of the Seismological Society of America, 2017, 107, 43-50.	2.3	6
48	Plate motion in sheared granular fault system. Earth and Planetary Science Letters, 2020, 548, 116481.	4.4	6
49	Experimental study correlating damage and permeability in concrete using confined, flattened Brazilian disks. International Journal of Damage Mechanics, 0, , 105678952199872.	4.2	6
50	Signature of transition to supershear rupture speed in the coseismic off-fault damage zone. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2021, 477, 20210364.	2.1	6
51	Special issue titled â€œcombined finite discrete element method and virtual experimentationâ€. Computational Particle Mechanics, 2020, 7, 763-763.	3.0	5
52	Failure in Confined Brazilian Tests on Sandstone. Applied Sciences (Switzerland), 2021, 11, 2285.	2.5	5
53	Injection Parameters That Promote Branching of Hydraulic Cracks. Geophysical Research Letters, 2021, 48, e2021GL093321.	4.0	4
54	Evolution of Permeability in Sandstone During Confined Brazilian Testing. Rock Mechanics and Rock Engineering, 2022, 55, 2651-2664.	5.4	4

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55	DISCRETE ELEMENT METHOD FOR MOLECULAR SCALE VISUALIZATION OF MICRO-FLOWS. Journal of Flow Visualization and Image Processing, 2007, 14, 17-34.	0.5	2
56	Discrete Element and Particle Methods. , 2020, , 659-671.		2
57	Granular temperature as an energy dissipation mechanism in bodies of the Solar System. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 2485-2493.	2.1	1
58	Discrete Element and Particle Methods. , 2018, , 1-14.		1
59	Assimilation of Dynamic Combined Finite Discrete Element Methods Using the Ensemble Kalman Filter. Applied Sciences (Switzerland), 2021, 11, 2898.	2.5	1
60	From force chains to nonclassical nonlinear dynamics in cemented granular materials. Physical Review E, 2022, 105, L022901.	2.1	1
61	Using Discovery Science To Increase Efficiency of Hydraulic Fracturing While Reducing Water Usage. ACS Symposium Series, 2015, , 71-88.	0.5	0
62	Fracture Mechanicsâ€”Theory, Modeling and Applications. Applied Sciences (Switzerland), 2021, 11, 7371.	2.5	0