

Jeffrey Hyman

List of Publications by Year in descending order

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65
papers

3,168
citations

172457

29
h-index

155660

55
g-index

69
all docs

69
docs citations

69
times ranked

2163
citing authors

#	ARTICLE	IF	CITATIONS
1	Shale gas and non-aqueous fracturing fluids: Opportunities and challenges for supercritical CO ₂ . Applied Energy, 2015, 147, 500-509.	10.1	622
2	dfnWorks: A discrete fracture network framework for modeling subsurface flow and transport. Computers and Geosciences, 2015, 84, 10-19.	4.2	264
3	The shale gas revolution: Barriers, sustainability, and emerging opportunities. Applied Energy, 2017, 199, 88-95.	10.1	242
4	Conforming Delaunay Triangulation of Stochastically Generated Three Dimensional Discrete Fracture Networks: A Feature Rejection Algorithm for Meshing Strategy. SIAM Journal of Scientific Computing, 2014, 36, A1871-A1894.	2.8	123
5	Fracture size and transmissivity correlations: Implications for transport simulations in sparse three-dimensional discrete fracture networks following a truncated power law distribution of fracture size. Water Resources Research, 2016, 52, 6472-6489.	4.2	103
6	Generalized lattice Boltzmann model for flow through tight porous media with Klinkenberg's effect. Physical Review E, 2015, 91, 033004.	2.1	96
7	Understanding hydraulic fracturing: a multi-scale problem. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150426.	3.4	92
8	Effect of advective flow in fractures and matrix diffusion on natural gas production. Water Resources Research, 2015, 51, 8646-8657.	4.2	85
9	Evaluating the effect of internal aperture variability on transport in kilometer scale discrete fracture networks. Advances in Water Resources, 2016, 94, 486-497.	3.8	75
10	A comparative study of discrete fracture network and equivalent continuum models for simulating flow and transport in the far field of a hypothetical nuclear waste repository in crystalline host rock. Journal of Hydrology, 2017, 553, 59-70.	5.4	70
11	Influence of injection mode on transport properties in kilometer-scale three-dimensional discrete fracture networks. Water Resources Research, 2015, 51, 7289-7308.	4.2	68
12	From Fluid Flow to Coupled Processes in Fractured Rock: Recent Advances and New Frontiers. Reviews of Geophysics, 2022, 60, e2021RG000744.	23.0	61
13	Stochastic generation of explicit pore structures by thresholding Gaussian random fields. Journal of Computational Physics, 2014, 277, 16-31.	3.8	58
14	Linking Structural and Transport Properties in Three-dimensional Fracture Networks. Journal of Geophysical Research: Solid Earth, 2019, 124, 1185-1204.	3.4	57
15	Relationship between pore size and velocity probability distributions in stochastically generated porous media. Physical Review E, 2014, 89, 013018.	2.1	53
16	Machine learning for graph-based representations of three-dimensional discrete fracture networks. Computational Geosciences, 2018, 22, 695-710.	2.4	49
17	Where Does Water Go During Hydraulic Fracturing?. Ground Water, 2016, 54, 488-497.	1.3	48
18	Predictions of first passage times in sparse discrete fracture networks using graph-based reductions. Physical Review E, 2017, 96, 013304.	2.1	46

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19	Advective Transport in Discrete Fracture Networks With Connected and Disconnected Textures Representing Internal Aperture Variability. <i>Water Resources Research</i> , 2019, 55, 5487-5501.	4.2	46
20	Heterogeneities of flow in stochastically generated porous media. <i>Physical Review E</i> , 2012, 86, 056701.	2.1	41
21	Modeling flow and transport in fracture networks using graphs. <i>Physical Review E</i> , 2018, 97, 033304.	2.1	41
22	Mixing in a three-phase system: Enhanced production of oil-wet reservoirs by CO ₂ injection. <i>Geophysical Research Letters</i> , 2016, 43, 196-205.	4.0	38
23	Quantifying Topological Uncertainty in Fractured Systems using Graph Theory and Machine Learning. <i>Scientific Reports</i> , 2018, 8, 11665.	3.3	38
24	Effects of fuel spatial distribution on wildland fire behaviour. <i>International Journal of Wildland Fire</i> , 2021, 30, 179.	2.4	38
25	Dispersion and Mixing in Three-Dimensional Discrete Fracture Networks: Nonlinear Interplay Between Structural and Hydraulic Heterogeneity. <i>Water Resources Research</i> , 2018, 54, 3243-3258.	4.2	37
26	Advancing Graph-Based Algorithms for Predicting Flow and Transport in Fractured Rock. <i>Water Resources Research</i> , 2018, 54, 6085-6099.	4.2	37
27	Flow Channeling in Fracture Networks: Characterizing the Effect of Density on Preferential Flow Path Formation. <i>Water Resources Research</i> , 2020, 56, e2020WR027986.	4.2	36
28	Analysis and Visualization of Discrete Fracture Networks Using a Flow Topology Graph. <i>IEEE Transactions on Visualization and Computer Graphics</i> , 2017, 23, 1896-1909.	4.4	34
29	Identifying Backbones in Three-Dimensional Discrete Fracture Networks: A Bipartite Graph-Based Approach. <i>Multiscale Modeling and Simulation</i> , 2018, 16, 1948-1968.	1.6	34
30	Anomalous Transport in Three-Dimensional Discrete Fracture Networks: Interplay Between Aperture Heterogeneity and Injection Modes. <i>Water Resources Research</i> , 2020, 56, e2020WR027378.	4.2	31
31	Matrix Diffusion in Fractured Media: New Insights Into Power Law Scaling of Breakthrough Curves. <i>Geophysical Research Letters</i> , 2019, 46, 13785-13795.	4.0	30
32	Emergence of Stable Laws for First Passage Times in Three-Dimensional Random Fracture Networks. <i>Physical Review Letters</i> , 2019, 123, 248501.	7.8	28
33	Upscaled discrete fracture matrix model (UDFM): an octree-refined continuum representation of fractured porous media. <i>Computational Geosciences</i> , 2020, 24, 293-310.	2.4	28
34	Efficient Monte Carlo With Graph-Based Subsurface Flow and Transport Models. <i>Water Resources Research</i> , 2018, 54, 3758-3766.	4.2	27
35	Model reduction for fractured porous media: a machine learning approach for identifying main flow pathways. <i>Computational Geosciences</i> , 2019, 23, 617-629.	2.4	26
36	Hydraulic characterization of a fault zone from fracture distribution. <i>Journal of Structural Geology</i> , 2020, 135, 104036.	2.3	25

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37	Characterizing the impact of particle behavior at fracture intersections in three-dimensional discrete fracture networks. <i>Physical Review E</i> , 2019, 99, 013110.	2.1	21
38	Homogenization of Dissolution and Enhanced Precipitation Induced by Bubbles in Multiphase Flow Systems. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL087163.	4.0	21
39	A machine learning framework for rapid forecasting and history matching in unconventional reservoirs. <i>Scientific Reports</i> , 2021, 11, 21730.	3.3	21
40	Coreflood on a chip: Core-scale micromodels for subsurface applications. <i>Fuel</i> , 2020, 281, 118716.	6.4	20
41	Stress Effects on Flow and Transport in Three-Dimensional Fracture Networks. <i>Journal of Geophysical Research: Solid Earth</i> , 2020, 125, e2020JB019754.	3.4	20
42	Characterizing the Influence of Fracture Density on Network Scale Transport. <i>Journal of Geophysical Research: Solid Earth</i> , 2020, 125, e2019JB018547.	3.4	18
43	Scale-Bridging in Three-Dimensional Fracture Networks: Characterizing the Effects of Variable Fracture Apertures on Network-Scale Flow Channelization. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL094400.	4.0	18
44	Transport Upscaling under Flow Heterogeneity and Matrix-Diffusion in Three-Dimensional Discrete Fracture Networks. <i>Advances in Water Resources</i> , 2021, 155, 103994.	3.8	18
45	Pedotransfer functions for permeability: A computational study at pore scales. <i>Water Resources Research</i> , 2013, 49, 2080-2092.	4.2	17
46	Influence of capillary end effects on steady-state relative permeability estimates from direct pore-scale simulations. <i>Physics of Fluids</i> , 2017, 29, .	4.0	17
47	Robust system size reduction of discrete fracture networks: a multi-fidelity method that preserves transport characteristics. <i>Computational Geosciences</i> , 2018, 22, 1515-1526.	2.4	17
48	Characterizing the Impact of Fractured Caprock Heterogeneity on Supercritical CO ₂ Injection. <i>Transport in Porous Media</i> , 2020, 131, 935-955.	2.6	17
49	Direct numerical simulation of fully saturated flow in natural porous media at the pore scale: a comparison of three computational systems. <i>Computational Geosciences</i> , 2015, 19, 423-437.	2.4	12
50	Discontinuities in effective permeability due to fracture percolation. <i>Mechanics of Materials</i> , 2018, 119, 25-33.	3.2	11
51	Graph-based flow modeling approach adapted to multiscale discrete-fracture-network models. <i>Physical Review E</i> , 2020, 102, 053312.	2.1	11
52	Multilevel Monte Carlo Predictions of First Passage Times in Three-Dimensional Discrete Fracture Networks: A Graph-Based Approach. <i>Water Resources Research</i> , 2020, 56, e2019WR026493.	4.2	10
53	Hyperbolic regions in flows through three-dimensional pore structures. <i>Physical Review E</i> , 2013, 88, 063014.	2.1	9
54	Towards real-time forecasting of natural gas production by harnessing graph theory for stochastic discrete fracture networks. <i>Journal of Petroleum Science and Engineering</i> , 2020, 195, 107791.	4.2	8

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55	Machine learning techniques for fractured media. <i>Advances in Geophysics</i> , 2020, 61, 109-150.	2.8	8
56	Flow and Transport in Three-Dimensional Discrete Fracture Matrix Models using Mimetic Finite Difference on a Conforming Multi-Dimensional Mesh. <i>Journal of Computational Physics</i> , 2022, , 111396.	3.8	7
57	Physics-informed machine learning for backbone identification in discrete fracture networks. <i>Computational Geosciences</i> , 2020, 24, 1429-1444.	2.4	6
58	A Probabilistic Clustering Approach for Identifying Primary Subnetworks of Discrete Fracture Networks with Quantified Uncertainty. <i>SIAM-ASA Journal on Uncertainty Quantification</i> , 2020, 8, 573-600.	2.0	6
59	Variable resolution Poisson-disk sampling for meshing discrete fracture networks. <i>Journal of Computational and Applied Mathematics</i> , 2022, 407, 114094.	2.0	6
60	A Comparison of Linear Solvers for Resolving Flow in Three-Dimensional Discrete Fracture Networks. <i>Water Resources Research</i> , 0, , .	4.2	6
61	Transient flow modeling in fractured media using graphs. <i>Physical Review E</i> , 2020, 102, 052310.	2.1	4
62	Statistical scaling of geometric characteristics in stochastically generated pore microstructures. <i>Computational Geosciences</i> , 2015, 19, 845-854.	2.4	3
63	Characterizing Reactive Transport Behavior in a Three-Dimensional Discrete Fracture Network. <i>Transport in Porous Media</i> , 0, , 1.	2.6	3
64	Multilevel Graph Partitioning for Three-Dimensional Discrete Fracture Network Flow Simulations. <i>Mathematical Geosciences</i> , 2021, 53, 1699-1724.	2.4	3
65	Using Discovery Science To Increase Efficiency of Hydraulic Fracturing While Reducing Water Usage. <i>ACS Symposium Series</i> , 2015, , 71-88.	0.5	0