Bernd Flemisch

List of Publications by Year
in descending order

68	2,189	304743	233421
papers	citations	22 h-index	45 g-index

78	78	78	1571
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A benchmark study on problems related to CO2 storage in geologic formations. Computational Geosciences, 2009, 13, 409-434.	2.4	348
2	DuMux: DUNE for multi-{phase,component,scale,physics,â€¦} flow and transport in porous media. Advances in Water Resources, 2011, 34, 1102-1112.	3.8	258
3	Benchmarks for single-phase flow in fractured porous media. Advances in Water Resources, 2018, 111, 239-258.	3.8	178
4	A coupling concept for twoâ€phase compositional porousâ€medium and singleâ€phase compositional free flow. Water Resources Research, 2011, 47, .	4.2	108
5	Uncertainties in practical simulation of CO2 storage. International Journal of Greenhouse Gas Control, 2012, 9, 234-242.	4.6	84
6	Dimensionally reduced flow models in fractured porous media: crossings and boundaries. Computational Geosciences, 2015, 19, 1219-1230.	2.4	82
7	DuMux 3 â€“ an open-source simulator for solving flow and transport problems in porous media with a focus on model coupling. Computers and Mathematics With Applications, 2021, 81, 423-443.	2.7	81
8	A discrete fracture model for two-phase flow in fractured porous media. Advances in Water Resources, 2017, 110, 335-348.	3.8	74
9	A new dual mortar method for curved interfaces: 2D elasticity. International Journal for Numerical Methods in Engineering, 2005, 63, 813-832.	2.8	70
10	Stable Lagrange multipliers for quadrilateral meshes of curved interfaces in 3D. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 1589-1602.	6.6	66
11	Elastoâ€“acoustic and acousticâ€“acoustic coupling on non-matching grids. International Journal for Numerical Methods in Engineering, 2006, 67, 1791-1810.	2.8	59
12	Verification benchmarks for single-phase flow in three-dimensional fractured porous media. Advances in Water Resources, 2021, 147, 103759.	3.8	59
13	Development of Open-Source Porous Media Simulators: Principles and Experiences. Transport in Porous Media, 2019, 130, 337-361.	2.6	53
14	Model coupling for multiphase flow in porous media. Advances in Water Resources, 2013, 51, 52-66.	3.8	49
15	Monotone nonlinear finiteâ€volume method for nonisothermal twoâ€phase twoâ€component flow in porous media. International Journal for Numerical Methods in Fluids, 2017, 84, 352-381.	1.6	45
16	A Coupled Discrete/Continuum Model for Describing Cancer-Therapeutic Transport in the Lung. PLoS ONE, 2012, 7, e31966.	2.5	43
17	Numerical scheme for coupling two-phase compositional porous-media flow and one-phase compositional free flow. IMA Journal of Applied Mathematics, 2012, 77, 887-909.	1.6	42
18	Brine migration resulting from CO2 injection into saline aquifers â€“ An approach to risk estimation including various levels of uncertainty. International Journal of Greenhouse Gas Control, 2012, 9, 495-506.	4.6	35

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19	Mortar methods with curved interfaces. Applied Numerical Mathematics, 2005, 54, 339-361.	2.1	34
20	Convergence of nonlinear finite volume schemes for heterogeneous anisotropic diffusion on general meshes. Journal of Computational Physics, 2017, 351, 80-107.	3.8	33
21	A Review of the XFEM-Based Approximation of Flow in Fractured Porous Media. SEMA SIMAI Springer Series, 2016, , 47-76.	0.7	28
22	Monotone nonlinear finite-volume method for challenging grids. Computational Geosciences, 2018, 22, 565-586.	2.4	27
23	Comparison of finite-volume schemes for diffusion problems. Oil and Gas Science and Technology, 2018, 73, 82.	1.4	23
24	Efficient multiphysics modelling with adaptive grid refinement using a MPFA method. Computational Geosciences, 2014, 18, 625-636.	2.4	22
25	Applications of the Mortar Finite Element Method in Vibroacoustics and Flow Induced Noise Computations. Acta Acustica United With Acustica, 2010, 96, 536-553.	0.8	19
26	Modeling drop dynamics at the interface between free and porous-medium flow using the mortar method. International Journal of Heat and Mass Transfer, 2016, 99, 660-671.	4.8	18
27	A hybrid-dimensional discrete fracture model for non-isothermal two-phase flow in fractured porous media. GEM - International Journal on Geomathematics, 2019, 10, 1.	1.6	18
28	An adaptive multiscale approach for modeling two-phase flow in porous media including capillary pressure. Water Resources Research, 2013, 49, 8139-8159.	4.2	13
29	Non-Matching Grids for a Flexible Discretization in Computational Acoustics. Communications in Computational Physics, 2012, 11, 472-488.	1.7	13
30	A Discrete 2-D Formulation for 3-D Field Problems With Continuous Symmetry. IEEE Transactions on Magnetics, 2010, 46, 3508-3511.	2.1	12
31	The localized reduced basis multiscale method for twoâ€phase flows in porous media. International Journal for Numerical Methods in Engineering, 2015, 102, 1018-1040.	2.8	12
32	Accuracy of fully coupled and sequential approaches for modeling hydro- and geomechanical processes. Computational Geosciences, 2020, 24, 1707-1723.	2.4	12
33	Multi-physics modeling of non-isothermal compositional flow on adaptive grids. Computer Methods in Applied Mechanics and Engineering, 2015, 292, 16-34.	6.6	11
34	Coupling scalar and vector potentials on nonmatching grids for eddy currents in a moving conductor. Journal of Computational and Applied Mathematics, 2004, 168, 191-205.	2.0	10
35	A domain decomposition method on nested domains and nonmatching grids. Numerical Methods for Partial Differential Equations, 2004, 20, 374-387.	3.6	9
36	EfficientModeling of Flow and Transport in Porous Media Using Multiphysics andMultiscale Approaches. , 2010, , 417-457.		9

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37	An Adaptive Multiphysics Model Coupling Vertical Equilibrium and Full Multidimensions for Multiphase Flow in Porous Media. Water Resources Research, 2018, 54, 4347-4360.	4.2	9
38	Sequential Model Coupling for Feasibility Studies of CO2Storage in Deep Saline Aquifers. Oil and Gas Science and Technology, 2011, 66, 93-103.	1.4	9
39	Dimensional reduction of field problems in a differentialâ€forms framework. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2009, 28, 907-921.	0.9	8
40	A Pseudoâ€Vertical Equilibrium Model for Slow Gravity Drainage Dynamics. Water Resources Research, 2017, 53, 10491-10507.	4.2	8
41	A Hybrid-Dimensional Coupled Pore-Network/Free-Flow Model Including Pore-Scale Slip and Its Application to a Micromodel Experiment. Transport in Porous Media, 2020, 135, 243-270.	2.6	8
42	Coupling Models of Different Complexity for the Simulation of CO2 Storage in Saline Aquifers. Energy Procedia, 2009, 1, 1767-1774.	1.8	7
43	A multiscale subvoxel perfusion model to estimate diffusive capillary wall conductivity in multiple sclerosis lesions from perfusion MRI data. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3298.	2.1	7
44	Surrogate-based Bayesian comparison of computationally expensive models: application to microbially induced calcite precipitation. Computational Geosciences, 2021, 25, 1899-1917.	2.4	7
45	A multiplicative Schwarz method and its application to nonlinear acoustic-structure interaction. ESAIM: Mathematical Modelling and Numerical Analysis, 2009, 43, 487-506.	1.9	6
46	Subsurface Environmental Modelling Between Science and Policy. Advances in Geophysical and Environmental Mechanics and Mathematics, 2021, , .	0.2	5
47	Multipoint flux approximation L-method in 3D: numerical convergence and application to two-phase flow through porous media. , 2013, , 39-80.		5
48	Comparison study of phase-field and level-set method for three-phase systems including two minerals. Computational Geosciences, 2022, 26, 545-570.	2.4	5
49	The Equivalence of Standard and Mixed Finite Element Methods in Applications to Elasto-Acoustic Interaction. SIAM Journal of Scientific Computing, 2010, 32, 1980-2006.	2.8	4
50	Efficient Modeling of Flow and Transport in Porous Media Using Multi-physics and Multi-scale Approaches. , 2015, , 703-749.		4
51	An Adaptive Hybrid Vertical Equilibrium/Fullâ€Dimensional Model for Compositional Multiphase Flow. Water Resources Research, 2022, 58, .	4.2	4
52	A Study on Darcy versus Forchheimer Models for Flow through Heterogeneous Landfills including Macropores. Water (Switzerland), 2022, 14, 546.	2.7	4
53	Scalar and vector potentials' coupling on nonmatching grids for the simulation of an electromagnetic brake. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2005, 24, 1061-1070.	0.9	3
54	Explicit continuum scale modeling of low-salinity mechanisms. Journal of Petroleum Science and Engineering, 2021, 199, 108336.	4.2	2

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55	Comparison of cell- and vertex-centered finite-volume schemes for flow in fractured porous media. Journal of Computational Physics, 2022, 448, 110715.	3.8	2
56	Frackit: a framework for stochastic fracture network generation and analysis. Journal of Open Source Software, 2020, 5, 2291.	4.6	2
57	Nonmatching Grids for the Coupled Computation of Flow Induced Noise. , 2007, , .		1
58	Convergence of nonlinear finite volume schemes for two-phase porous media flow on general meshes. IMA Journal of Numerical Analysis, 2022, 42, 515-568.	2.9	1
59	Geologic Carbon Sequestration. Advances in Geophysical and Environmental Mechanics and Mathematics, 2021, , 109-152.	0.2	1
60	Hydraulic Fracturing. Advances in Geophysical and Environmental Mechanics and Mathematics, 2021, , 153-178.	0.2	1
61	Nonconforming Methods for Nonlinear Elasticity Problems. , 2007, , 65-76.		1
62	Nonconforming Discretization Techniques for Overlapping Domain Decompositions. , 2004, , 316-325.		1
63	Efficient Modeling of Flow and Transport in Porous Media Using Multi-physics and Multi-scale Approaches. , 2013, , 1-43.		0
64	An Open Source Numerical CO2 Laboratory. , 2012, , .		0
65	Conceptual Models for Environmental Engineering Related to Subsurface Flow and Transport. Advances in Geophysical and Environmental Mechanics and Mathematics, 2021, , 15-33.	0.2	0
66	Overview of Mathematical and Numerical Solution Methods. Advances in Geophysical and Environmental Mechanics and Mathematics, 2021, , 35-56.	0.2	0
67	Software Concepts and Implementation. Advances in Geophysical and Environmental Mechanics and Mathematics, 2021, , 57-81.	0.2	0
68	The Science-Policy Interface of Subsurface Environmental Modelling. Advances in Geophysical and Environmental Mechanics and Mathematics, 2021, , 83-106.	0.2	0