Harald van Brummelen

List of Publications by Year
in descending order

78 papers	1,867 citations	236612 25 h-index	276539 41 g-index
79 all docs	79 docs citations	79 times ranked	1315 citing authors

#	Article	IF	Citations
1	A monolithic approach to fluidâ€“structure interaction. Computers and Fluids, 2004, 33, 839-848.	1.3	180
2	Added Mass Effects of Compressible and Incompressible Flows in Fluid-Structure Interaction. Journal of Applied Mechanics, Transactions ASME, 2009, 76, .	1.1	118
3	Condition number analysis and preconditioning of the finite cell method. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 297-327.	3.4	97
4	Effects of intima stiffness and plaque morphology on peak cap stress. BioMedical Engineering OnLine, 2011, 10, 25.	1.3	92
5	An interface Newton-Krylov solver for fluid-structure interaction. International Journal for Numerical Methods in Fluids, 2005, 47, 1189-1195.	0.9	83
6	On the Nonnormality of Subiteration for a Fluid-Structure-Interaction Problem. SIAM Journal of Scientific Computing, 2005, 27, 599-621.	1.3	76
7	A fracture-controlled path-following technique for phase-field modeling of brittle fracture. Finite Elements in Analysis and Design, 2016, 113, 14-29.	1.7	71
8	Goal-adaptive Isogeometric Analysis with hierarchical splines. Computer Methods in Applied Mechanics and Engineering, 2014, 270, 270-292.	3.4	58
9	The relevance of conservation for stability and accuracy of numerical methods for fluidâ€“structure interaction. Computer Methods in Applied Mechanics and Engineering, 2003, 192, 4195-4215.	3.4	53
10	Partitioned iterative solution methods for fluidâ€“structure interaction. International Journal for Numerical Methods in Fluids, 2011, 65, 3-27.	0.9	49
11	Initial stress in biomechanical models of atherosclerotic plaques. Journal of Biomechanics, 2011, 44, 2376-2382.	0.9	46
12	Goal-oriented error estimation and adaptivity for fluidâ€“structure interaction using exact linearized adjoints. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 2738-2757.	3.4	42
13	A pressure-invariant conservative Godunov-type method for barotropic two-fluid flows. Journal of Computational Physics, 2003, 185, 289-308.	1.9	41
14	Diffuse-interface two-phase flow models with different densities: A new quasi-incompressible form and a linear energy-stable method. Mathematical Models and Methods in Applied Sciences, 2018, 28, 733-770.	1.7	39
15	Robust and parallel scalable iterative solutions for large-scale finite cell analyses. Finite Elements in Analysis and Design, 2019, 163, 14-30.	1.7	37
16	Preconditioning immersed isogeometric finite element methods with application to flow problems. Computer Methods in Applied Mechanics and Engineering, 2019, 348, 604-631.	3.4	34
17	Space/time multigrid for a fluidâ€“structure-interaction problem. Applied Numerical Mathematics, 2008, 58, 1951-1971.	1.2	33
18	Mixed Isogeometric Finite Cell Methods for the Stokes problem. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 400-423.	3.4	32

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19	Flux Evaluation in Primal and Dual Boundary-Coupled Problems. Journal of Applied Mechanics, Transactions ASME, 2012, 79, .	1.1	31
20	A finite-element/boundary-element method for large-displacement fluid-structure interaction. Computational Mechanics, 2012, 50, 779-788.	2.2	30
21	Riemann-Problem and Level-Set Approaches for Homentropic Two-Fluid Flow Computations. Journal of Computational Physics, 2002, 181, 654-674.	1.9	29
22	Error-amplification analysis of subiteration-preconditioned GMRES for fluidâ€“structure interaction. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 2124-2148.	3.4	29
23	Multigrid solvers for immersed finite element methods and immersed isogeometric analysis. Computational Mechanics, 2020, 65, 807-838.	2.2	29
24	Image-based modeling of spontaneous imbibition in porous media by a dynamic pore network model. Advances in Water Resources, 2021, 152, 103932.	1.7	29
25	Efficient Numerical Solution of Steady Free-Surface Navierâ€“Stokes Flow. Journal of Computational Physics, 2001, 174, 120-137.	1.9	27
26	Skeleton-stabilized immersogeometric analysis for incompressible viscous flow problems. Computer Methods in Applied Mechanics and Engineering, 2019, 344, 421-450.	3.4	27
27	Error-estimate-based adaptive integration for immersed isogeometric analysis. Computers and Mathematics With Applications, 2020, 80, 2481-2516.	1.4	26
28	Moment Closure Approximations of the Boltzmann Equation Based on $$varphi $$ Ït -Divergences. Journal of Statistical Physics, 2016, 164, 77-104.	0.5	25
29	The effects of plaque morphology and material properties on peak cap stress in human coronary arteries. Computer Methods in Biomechanics and Biomedical Engineering, 2016, 19, 771-779.	0.9	23
30	Energy conservation under incompatibility for fluidâ€“structure interaction problems. Computer Methods in Applied Mechanics and Engineering, 2003, 192, 2727-2748.	3.4	22
31	A finite-element/boundary-element method for three-dimensional, large-displacement fluidâ€“structure-interaction. Computer Methods in Applied Mechanics and Engineering, 2015, 284, 637-663.	3.4	22
32	Goal-Oriented Error Estimation and Adaptivity for Free-Boundary Problems: The Shape-Linearization Approach. SIAM Journal of Scientific Computing, 2010, 32, 1093-1118.	1.3	20
33	An investigation of Interface-GMRES(R) for fluidâ€“structure interaction problems with flutter and divergence. Computational Mechanics, 2011, 47, 17-29.	2.2	19
34	Worst-case multi-objective error estimation and adaptivity. Computer Methods in Applied Mechanics and Engineering, 2017, 313, 723-743.	3.4	18
35	Goal-Oriented Error Estimation and Adaptivity for Free-Boundary Problems: The Domain-Map Linearization Approach. SIAM Journal of Scientific Computing, 2010, 32, 1064-1092.	1.3	16
36	Skeleton-stabilized IsoGeometric Analysis: High-regularity interior-penalty methods for incompressible viscous flow problems. Computer Methods in Applied Mechanics and Engineering, 2018, 337, 324-351.	3.4	16

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37	Fast divergence-conforming reduced basis methods for steady Navierâ€“Stokes flow. Computer Methods in Applied Mechanics and Engineering, 2019, 346, 486-512.	3.4	15
38	A Proper Generalized Decomposition (PGD) approach to crack propagation in brittle materials: with application to random field material properties. Computational Mechanics, 2020, 65, 451-473.	2.2	15
39	On the adjoint-consistent formulation of interface conditions in goal-oriented error estimation and adaptivity for fluidâ€“structure interaction. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 3369-3385.	3.4	14
40	Duality-based two-level error estimation for time-dependent PDEs: Application to linear and nonlinear parabolic equations. Computer Methods in Applied Mechanics and Engineering, 2015, 288, 83-109.	3.4	14
41	Goalâ€oriented error estimation for Stokes flow interacting with a flexible channel. International Journal for Numerical Methods in Fluids, 2008, 56, 1551-1557.	0.9	12
42	An entropy stable discontinuous Galerkin finite-element moment method for the Boltzmann equation. Computers and Mathematics With Applications, 2016, 72, 1988-1999.	1.4	12
43	An adaptive isogeometric analysis approach to elastoâ€capillary fluidâ€solid interaction. International Journal for Numerical Methods in Engineering, 2021, 122, 5331-5352.	1.5	11
44	Elasto-Capillarity Simulations Based on the Navierâ€“Stokesâ€“Cahnâ€“Hilliard Equations. Modeling and Simulation in Science, Engineering and Technology, 2016, , 451-462.	0.4	11
45	Singular Nature of the Elastocapillary Ridge. Physical Review X, 2020, 10, .	2.8	11
46	A finite-element/boundary-element method for large-displacement fluidâ€“structure interaction with potential flow. Computer Methods in Applied Mechanics and Engineering, 2013, 266, 57-69.	3.4	10
47	Topology-preserving scan-based immersed isogeometric analysis. Computer Methods in Applied Mechanics and Engineering, 2022, 392, 114648.	3.4	10
48	Residual-based error estimation and adaptivity for stabilized immersed isogeometric analysis using truncated hierarchical B-splines. Journal of Mechanics, 2022, 38, 204-237.	0.7	10
49	On the adjoint solution of the quasi-1D Euler equations: the effect of boundary conditions and the numerical flux function. International Journal for Numerical Methods in Fluids, 2005, 47, 987-993.	0.9	9
50	Error estimation and adaptive moment hierarchies for goal-oriented approximations of the Boltzmann equation. Computer Methods in Applied Mechanics and Engineering, 2017, 325, 219-239.	3.4	9
51	Binary-fluidâ€“solid interaction based on the Navierâ€“Stokesâ€“Korteweg equations. Mathematical Models and Methods in Applied Sciences, 2019, 29, 995-1036.	1.7	9
52	Numerical solution of steady free-surface flows by the adjoint optimal shape design method. International Journal for Numerical Methods in Fluids, 2003, 41, 3-27.	0.9	8
53	Finite element simulation of pressure-loaded phase-field fractures. Meccanica, 2018, 53, 1513-1545.	1.2	8
54	8. Binary-fluidâ€“solid interaction based on the Navierâ€“Stokesâ€“Cahnâ€“Hilliard Equations. , 2017, , 283-328.		8

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55	Discontinuities without discontinuity: The Weakly-enforced Slip Method. Computer Methods in Applied Mechanics and Engineering, 2014, 271, 144-166.	3.4	7
56	A multiscale diffuse-interface model for two-phase flow in porous media. Computers and Fluids, 2016, 141, 212-222.	1.3	7
57	Sampling-based stochastic analysis of the PKN model for hydraulic fracturing. Computational Geosciences, 2019, 23, 81-105.	1.2	6
58	An efficient quasiâ€Newton method for twoâ€dimensional steady free surface flow. International Journal for Numerical Methods in Fluids, 2020, 92, 785-801.	0.9	6
59	An efficient quasiâ€Newton method for threeâ€dimensional steady free surface flow. International Journal for Numerical Methods in Fluids, 2021, 93, 2581-2610.	0.9	4
60	Adjoint shape optimization for steady free-surface flows. International Journal for Numerical Methods in Fluids, 2002, 40, 605-614.	0.9	3
61	Goal-oriented model adaptivity for viscous incompressible flows. Computational Mechanics, 2015, 55, 1181-1190.	2.2	3
62	Goal-oriented adaptive methods for a Boltzmann-type equation. , 2011, , .		2
63	A Posteriori Error Estimation and Adaptivity for Nonlinear Parabolic Equations using IMEX-Galerkin Discretization of Primal and Dual Equations. SIAM Journal of Scientific Computing, 2018, 40, A3371-A3399.	1.3	2
64	Nitscheâ€™s method as a variational multiscale formulation and a resulting boundary layer fine-scale model. Computer Methods in Applied Mechanics and Engineering, 2021, 382, 113878.	3.4	2
65	Shape-Newton Method for Isogeometric Discretizations of Free-Boundary Problems. Computational Methods in Applied Sciences (Springer), 2013, , 85-102.	0.1	2
66	Mesh association by projection along smoothed-normal-vector fields: Association of closed manifolds. International Journal for Numerical Methods in Engineering, 2008, 73, 493-520.	1.5	1
67	A discontinuous Galerkin finite-element method for a 1D prototype of the Boltzmann equation. Journal of Computational Physics, 2011, 230, 6115-6135.	1.9	1
68	Vanguard developments in computational methods for fluidâ€structure interaction. International Journal for Numerical Methods in Engineering, 2021, 122, 5173-5175.	1.5	1
69	Reduced order models for finite-volume simulations of turbulent flow around wind-turbine blades.. Journal of Physics: Conference Series, 2021, 2018, 012042.	0.3	1
70	Entropy Stable Discontinuous Galerkin Finite Element Moment Methods for Compressible Fluid Dynamics. Lecture Notes in Computational Science and Engineering, 2020, , 75-95.	0.1	1
71	On the effect of nonlinearity and Jacobian initialization on the convergence of the generalized Broyden quasiâ€Newton method. International Journal for Numerical Methods in Engineering, 0, , .	1.5	1
72	A Godunov-Type Method for Capturing Water Waves. , 2001, , 949-968.		0

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73	An ${H^1(mathcal{P}^{mathsf{h}})}$â€Coercive Discontinuous Galerkin Formulation for the Poisson Problem: 1D Analysis. SIAM Journal on Numerical Analysis, 2006, 44, 2671-2698.	1.1	0
74	Numerical Solution of Steady Free-Surface Navier-Stokes Flow. , 2001, , 305-310.		0
75	Fix for Solution Errors near Interfaces in Two-Fluid Flow Computations. , 2003, , 523-528.		0
76	Conservation under Incompatibility for Fluid-Solid-Interaction Problems: the NPCL Method. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2007, , 413-432.	0.1	0
77	Initial Stress in Biomechanical Models of Atherosclerotic Plaques. , 2011, , .		0
78	Inverting elastic dislocations using the Weaklyâ€enforced Slip Method. International Journal for Numerical and Analytical Methods in Geomechanics, 0, , .	1.7	0