Robert Nrnberg

List of Publications by Year in Descending Order

72 papers	1,189 citations	20 h-index	31 g-index
75 ext. papers	1,365 ext. citations	2.1 avg, IF	4.79 L-index

#	Paper	IF	Citations
72	Volume-preserving parametric finite element methods for axisymmetric geometric evolution equations. *Journal of Computational Physics*, **2022**, 460, 111180	4.1	2
71	Finite-element approximation of a phase field model for tumour growth. *Portugaliae Mathematica*, **2021**, 78, 341-365	0.4	
70	Error Analysis for a Finite Difference Scheme for Axisymmetric Mean Curvature Flow of Genus-0 Surfaces. *SIAM Journal on Numerical Analysis*, **2021**, 59, 2698-2721	2.4	0
69	Stable approximations for axisymmetric Willmore flow for closed and open surfaces. *ESAIM: Mathematical Modelling and Numerical Analysis*, **2021**, 55, 833-885	1.8	2
68	A finite element error analysis for axisymmetric mean curvature flow. *IMA Journal of Numerical Analysis*, **2021**, 41, 1641-1667	1.8	5
67	Structure-preserving discretizations of gradient flows for axisymmetric two-phase biomembranes. *IMA Journal of Numerical Analysis*, **2021**, 41, 1899-1940	1.8	1
66	Numerical approximation of the stochastic Cahn–Hilliard equation near the sharp interface limit. *Numerische Mathematik*, **2021**, 147, 505-551	2.2	2
65	Numerical approximation of boundary value problems for curvature flow and elastic flow in Riemannian manifolds. *Numerische Mathematik*, **2021**, 149, 375	2.2	1
64	Cahn–Hilliard–Brinkman systems for tumour growth. *Discrete and Continuous Dynamical Systems - Series S*, **2021**, 14, 3989	2.8	1
63	Parametric finite element approximations of curvature-driven interface evolutions. *Handbook of Numerical Analysis*, **2020**, 21, 275-423	1	11
62	Numerical approximation of curve evolutions in Riemannian manifolds. *IMA Journal of Numerical Analysis*, **2020**, 40, 1601-1651	1.8	4
61	Variational discretization of axisymmetric curvature flows. *Numerische Mathematik*, **2019**, 141, 791-837	2.2	9
60	Discrete Gradient Flows for General Curvature Energies. *SIAM Journal of Scientific Computing*, **2019**, 41, A2012-A2036	2.6	0
59	Stable Discretizations of Elastic Flow in Riemannian Manifolds. *SIAM Journal on Numerical Analysis*, **2019**, 57, 1987-2018	2.4	4
58	Finite element methods for fourth order axisymmetric geometric evolution equations. *Journal of Computational Physics*, **2019**, 376, 733-766	4.1	14
57	A multiphase Cahn–Hilliard–Darcy model for tumour growth with necrosis. *Mathematical Models and Methods in Applied Sciences*, **2018**, 28, 525-577	3.5	51
56	Stable finite element approximation of a Cahn–Hilliard–Stokes system coupled to an electric field. *European Journal of Applied Mathematics*, **2017**, 28, 470-498	1	1

55	Numerical approximation of a non-smooth phase-field model for multicomponent incompressible flow. *ESAIM: Mathematical Modelling and Numerical Analysis*, **2017**, 51, 1089-1117	1.8	7
54	Comparative Simulations of Taylor Flow with Surfactants Based on Sharp- and Diffuse-Interface Methods. *Advances in Mathematical Fluid Mechanics*, **2017**, 639-661	0.3	2
53	Finite element approximation for the dynamics of fluidic two-phase biomembranes. *ESAIM: Mathematical Modelling and Numerical Analysis*, **2017**, 51, 2319-2366	1.8	12
52	Finite element approximation for the dynamics of asymmetric fluidic biomembranes. *Mathematics of Computation*, **2016**, 86, 1037-1069	1.6	7
51	Computational Parametric Willmore Flow with Spontaneous Curvature and Area Difference Elasticity Effects. *SIAM Journal on Numerical Analysis*, **2016**, 54, 1732-1762	2.4	7
50	A fitted finite element method for the numerical approximation of void electro-stress migration. *Applied Numerical Mathematics*, **2016**, 104, 204-217	2.5	0
49	Fitted finite element discretization of two-phase Stokes flow. *International Journal for Numerical Methods in Fluids*, **2016**, 82, 709-729	1.9	4
48	A stable numerical method for the dynamics of fluidic membranes. *Numerische Mathematik*, **2016**, 134, 783-822	2.2	24
47	A Stable Parametric Finite Element Discretization of Two-Phase Navier–Stokes Flow. *Journal of Scientific Computing*, **2015**, 63, 78-117	2.3	19
46	Numerical computations of the dynamics of fluidic membranes and vesicles. *Physical Review E*, **2015**, 92, 052704	2.4	24
45	Finite element approximation of a phase field model arising in nanostructure patterning. *Numerical Methods for Partial Differential Equations*, **2015**, 31, 1890-1924	2.5	2
44	Stable finite element approximations of two-phase flow with soluble surfactant. *Journal of Computational Physics*, **2015**, 297, 530-564	4.1	14
43	Stable numerical approximation of two-phase flow with a Boussinesq–Scriven surface fluid. *Communications in Mathematical Sciences*, **2015**, 13, 1829-1874	1	9
42	An unfitted finite element method for the numerical approximation of void electromigration. *Journal of Computational and Applied Mathematics*, **2014**, 270, 531-544	2.4	1
41	Phase Field Models Versus Parametric Front Tracking Methods: Are They Accurate and Computationally Efficient?. *Communications in Computational Physics*, **2014**, 15, 506-555	2.4	8
40	On the stable numerical approximation of two-phase flow with insoluble surfactant. *ESAIM: Mathematical Modelling and Numerical Analysis*, **2014**,	1.8	2
39	Stable phase field approximations of anisotropic solidification. *IMA Journal of Numerical Analysis*, **2014**, 34, 1289-1327	1.8	10
38	Eliminating spurious velocities with a stable approximation of viscous incompressible two-phase Stokes flow. *Computer Methods in Applied Mechanics and Engineering*, **2013**, 267, 511-530	5.7	17

37	On the stable discretization of strongly anisotropic phase field models with applications to crystal growth. *ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik*, **2013**, 93, 719-732	1	7
36	The order of condensation in capillary grooves. *Journal of Physics Condensed Matter*, **2013**, 25, 192101	1.8	16
35	The degenerate and non-degenerate deep quench obstacle problem: A numerical comparison. *Networks and Heterogeneous Media*, **2013**, 8, 37-64	1.6	3
34	Parametric approximation of isotropic and anisotropic elastic flow for closed and open curves. *Numerische Mathematik*, **2012**, 120, 489-542	2.2	30
33	ELASTIC FLOW WITH JUNCTIONS: VARIATIONAL APPROXIMATION AND APPLICATIONS TO NONLINEAR SPLINES. *Mathematical Models and Methods in Applied Sciences*, **2012**, 22, 1250037	3.5	11
32	Numerical computations of faceted pattern formation in snow crystal growth. *Physical Review E*, **2012**, 86, 011604	2.4	37
31	The approximation of planar curve evolutions by stable fully implicit finite element schemes that equidistribute. *Numerical Methods for Partial Differential Equations*, **2011**, 27, 1-30	2.5	32
30	Numerical approximation of gradient flows for closed curves in Rd. *IMA Journal of Numerical Analysis*, **2010**, 30, 4-60	1.8	27
29	Finite-element approximation of coupled surface and grain boundary motion with applications to thermal grooving and sintering. *European Journal of Applied Mathematics*, **2010**, 21, 519-556	1	18
28	Parametric approximation of surface clusters driven by isotropic and anisotropic surface energies. *Interfaces and Free Boundaries*, **2010**, 187-234	0.7	20
27	On stable parametric finite element methods for the Stefan problem and the MullinsSekerka problem with applications to dendritic growth. *Journal of Computational Physics*, **2010**, 229, 6270-6299	4.1	24
26	A posterioriestimates for the CahnHilliard equation with obstacle free energy. *ESAIM: Mathematical Modelling and Numerical Analysis*, **2009**, 43, 1003-1026	1.8	16
25	Phase field computations for surface diffusion and void electromigration in ({mathbb{R}^3}). *Computing and Visualization in Science*, **2009**, 12, 319-327	1	13
24	A multigrid method for the CahnHilliard equation with obstacle potential. *Applied Mathematics and Computation*, **2009**, 213, 290-303	2.7	18
23	Numerical simulations of immiscible fluid clusters. *Applied Numerical Mathematics*, **2009**, 59, 1612-1628	2.5	9
22	Parametric Approximation of Willmore Flow and Related Geometric Evolution Equations. *SIAM Journal of Scientific Computing*, **2008**, 31, 225-253	2.6	62
21	Finite Element Approximation of a Three Dimensional Phase Field Model for Void Electromigration. *Journal of Scientific Computing*, **2008**, 37, 202-232	2.3	13
20	A variational formulation of anisotropic geometric evolution equations in higher dimensions. *Numerische Mathematik*, **2008**, 109, 1-44	2.2	31

19	On the parametric finite element approximation of evolving hypersurfaces in . *Journal of Computational Physics*, **2008**, 227, 4281-4307	4.1	65
18	Adaptive finite element methods for Cahn□Hilliard equations. *Journal of Computational and Applied Mathematics*, **2008**, 218, 2-11	2.4	28
17	On sharp interface limits of Allen--Cahn/Cahn--Hilliard variational inequalities. *Discrete and Continuous Dynamical Systems - Series S*, **2008**, 1, 1-14	2.8	4
16	A phase field model for the electromigration of intergranular voids. *Interfaces and Free Boundaries*, **2007**, 171-210	0.7	18
15	A parametric finite element method for fourth order geometric evolution equations. *Journal of Computational Physics*, **2007**, 222, 441-467	4.1	95
14	Numerical approximation of anisotropic geometric evolution equations in the plane. *IMA Journal of Numerical Analysis*, **2007**, 28, 292-330	1.8	21
13	Stress- and diffusion-induced interface motion: Modelling and numerical simulations. *European Journal of Applied Mathematics*, **2007**, 18, 631-657	1	7
12	On the Variational Approximation of Combined Second and Fourth Order Geometric Evolution Equations. *SIAM Journal of Scientific Computing*, **2007**, 29, 1006-1041	2.6	48
11	Finite Element Approximation of Soluble Surfactant Spreading on a Thin Film. *SIAM Journal on Numerical Analysis*, **2006**, 44, 1218-1247	2.4	8
10	Finite element approximation of a phase field model for surface diffusion of voids in a stressed solid. *Mathematics of Computation*, **2005**, 75, 7-42	1.6	13
9	Convergence of a finite-element approximation of surfactant spreading on a thin film in the presence of van der Waals forces. *IMA Journal of Numerical Analysis*, **2004**, 24, 323-363	1.8	23
8	Finite element approximation of a sixth order nonlinear degenerate parabolic equation. *Numerische Mathematik*, **2004**, 96, 401-434	2.2	30
7	Finite Element Approximation of a Phase Field Model for Void Electromigration. *SIAM Journal on Numerical Analysis*, **2004**, 42, 738-772	2.4	56
6	Finite element approximation of a Stefan problem with degenerate Joule heating. *ESAIM: Mathematical Modelling and Numerical Analysis*, **2004**, 38, 633-652	1.8	5
5	Finite Element Approximation of Surfactant Spreading on a Thin Film. *SIAM Journal on Numerical Analysis*, **2003**, 41, 1427-1464	2.4	24
4	Stochastic Programming for Power Production and Trading Under Uncertainty **2003**, 623-636		4
3	Finite-element approximation of a nonlinear degenerate parabolic system describing bacterial pattern formation. *Interfaces and Free Boundaries*, **2002**, 277-307	0.7	10
2	A Two-Stage Planning Model for Power Scheduling in a Hydro-Thermal System Under Uncertainty. *Optimization and Engineering*, **2002**, 3, 355-378	2.1	60

1 Gradient flow dynamics of two-phase biomembranes: Sharp interface variational formulation and finite element approximation. *SMAI Journal of Computational Mathematics*,4, 151-195 6