Ricardo Ruiz Baier

List of Publications by Year
in descending order

110	1,952	304368	329751
papers	citations	22 h-index	37 g-index

111	111	111	1045
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	An Lpspaces-based formulation yielding a new fully mixed finite element method for the coupled Darcy and heat equations. IMA Journal of Numerical Analysis, 2022, 42, 3154-3206.	1.5	9
2	Well-posedness and discrete analysis for advection-diffusion-reaction in poroelastic media. Applicable Analysis, 2022, 101, 4914-4941.	0.6	7
3	The Biotâ€“Stokes coupling using total pressure: Formulation, analysis and application to interfacial flow in the eye. Computer Methods in Applied Mechanics and Engineering, 2022, 389, 114384.	3.4	12
4	A posteriori error analysis of mixed finite element methods for stress-assisted diffusion problems. Journal of Computational and Applied Mathematics, 2022, 409, 114144.	1.1	0
5	A posteriori error analysis of Banach spaces-based fully-mixed finite element methods for Boussinesq-type models. Journal of Numerical Mathematics, 2022, 30, 325-356.	1.8	2
6	Parameter-robust methods for the Biotâ€“Stokes interfacial coupling without Lagrange multipliers. Journal of Computational Physics, 2022, 467, 111464.	1.9	4
7	A mixed-primal finite element method for the coupling of Brinkmanâ€“Darcy flow and nonlinear transport. IMA Journal of Numerical Analysis, 2021, 41, 381-411.	1.5	4
8	Mixed Kirchhoff stressâ€“displacementâ€“pressure formulations for incompressible hyperelasticity. Computer Methods in Applied Mechanics and Engineering, 2021, 374, 113562.	3.4	9
9	Adaptive Mesh Refinement in Deformable Image Registration: A Posteriori Error Estimates for Primal and Mixed Formulations. SIAM Journal on Imaging Sciences, 2021, 14, 1238-1272.	1.3	0
10	Virtual element methods for the three-field formulation of time-dependent linear poroelasticity. Advances in Computational Mathematics, 2021, 47, 1.	0.8	16
11	Robust Preconditioners for Perturbed Saddle-Point Problems and Conservative Discretizations of Biot's Equations Utilizing Total Pressure. SIAM Journal of Scientific Computing, 2021, 43, B961-B983.	1.3	12
12	Banach spaces-based analysis of a fully-mixed finite element method for the steady-state model of fluidized beds. Computers and Mathematics With Applications, 2021, 84, 244-276.	1.4	13
13	New primal and dual-mixed finite element methods for stable image registration with singular regularization. Mathematical Models and Methods in Applied Sciences, 2021, 31, 979-1020.	1.7	2
14	Conforming, Nonconforming and DG Methods for the Stationary Generalized Burgers-Huxley Equation. Journal of Scientific Computing, 2021, 88, 1.	1.1	3
15	Error analysis for a vorticity/Bernoulli pressure formulation for the Oseen equations. Journal of Numerical Mathematics, 2021, .	1.8	0
16	Velocity-vorticity-pressure formulation for the Oseen problem with variable viscosity. Calcolo, 2021, 58, 1.	0.6	4
17	Second-order schemes for axisymmetric Navierâ€“Stokesâ€“Brinkman and transport equations modelling water filters. Numerische Mathematik, 2021, 147, 431-479.	0.9	3
18	An orthotropic electro-viscoelastic model for the heart with stress-assisted diffusion. Biomechanics and Modeling in Mechanobiology, 2020, 19, 633-659.	1.4	17

#	Article	IF	Citations
19	Ultra-weak symmetry of stress for augmented mixed finite element formulations in continuum mechanics. Calcolo, 2020, 57, 1.	0.6	4
20	Convergence of H(div)-conforming schemes for a new model of sedimentation in circular clarifiers with a rotating rake. Computer Methods in Applied Mechanics and Engineering, 2020, 367, 113130.	3.4	3
21	Rotation-Based Mixed Formulations for an Elasticity-Poroelasticity Interface Problem. SIAM Journal of Scientific Computing, 2020, 42, B225-B249.	1.3	9
22	Conservative discontinuous finite volume and mixed schemes for a new four-field formulation in poroelasticity. ESAIM: Mathematical Modelling and Numerical Analysis, 2020, 54, 273-299.	0.8	25
23	Sensitivity analysis of a strongly-coupled human-based electromechanical cardiac model: Effect of mechanical parameters on physiologically relevant biomarkers. Computer Methods in Applied Mechanics and Engineering, 2020, 361, 112762.	3.4	52
24	Stability analysis for a new model of multi-species convection-diffusion-reaction in poroelastic tissue. Applied Mathematical Modelling, 2020, 84, 425-446.	2.2	12
25	A new mixed finite element method for the n-dimensional Boussinesq problem with temperature-dependent viscosity. Networks and Heterogeneous Media, 2020, 15, 215-245.	0.5	8
26	Modelling Thermo-Electro-Mechanical Effects in Orthotropic Cardiac Tissue. Communications in Computational Physics, 2020, 27, 87-115.	0.7	11
27	Error Bounds for Discontinuous Finite Volume Discretisations of Brinkman Optimal Control Problems. Journal of Scientific Computing, 2019, 78, 64-93.	1.1	6
28	Incorporating variable viscosity in vorticity-based formulations for Brinkman equations. Comptes Rendus Mathematique, 2019, 357, 552-560.	0.1	7
29	Analysis and Approximation of a Vorticityâ€“Velocityâ€“Pressure Formulation for the Oseen Equations. Journal of Scientific Computing, 2019, 80, 1577-1606.	1.1	10
30	On $H(div)$-conforming Methods for Double-diffusion Equations in Porous Media. SIAM Journal on Numerical Analysis, 2019, 57, 1318-1343.	1.1	14
31	New Mixed Finite Element Methods for Natural Convection with Phase-Change in Porous Media. Journal of Scientific Computing, 2019, 80, 141-174.	1.1	10
32	Numerical approximation of a 3D mechanochemical interface model for skin patterning. Journal of Computational Physics, 2019, 384, 383-404.	1.9	7
33	Stability and finite element approximation of phase change models for natural convection in porous media. Journal of Computational and Applied Mathematics, 2019, 360, 117-137.	1.1	19
34	Vorticityâ€pressure formulations for the Brinkmanâ€Darcy coupled problem. Numerical Methods for Partial Differential Equations, 2019, 35, 528-544.	2.0	4
35	Formulation and analysis of fully-mixed methods for stress-assisted diffusion problems. Computers and Mathematics With Applications, 2019, 77, 1312-1330.	1.4	5
36	Mixed displacementâ€“rotationâ€“pressure formulations for linear elasticity. Computer Methods in Applied Mechanics and Engineering, 2019, 344, 71-94.	3.4	6

#	Article	IF	Citations
37	CONVECTION-DIFFUSION-REACTION AND TRANSPORT-FLOW PROBLEMS MOTIVATED BY MODELS OF SEDIMENTATION: SOME RECENT ADVANCES. , 2019, , .		0
38	Analysis and mixed-primal finite element discretisations for stress-assisted diffusion problems. Computer Methods in Applied Mechanics and Engineering, 2018, 337, 411-438.	3.4	13
39	Coupling of Discontinuous Galerkin Schemes for Viscous Flow in Porous Media with Adsorption. SIAM Journal of Scientific Computing, 2018, 40, B637-B662.	1.3	7
40	Competing Mechanisms of Stress-Assisted Diffusivity and Stretch-Activated Currents in Cardiac Electromechanics. Frontiers in Physiology, 2018, 9, 1714.	1.3	29
41	Discontinuous approximation of flow in porous media with adsorption. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800064.	0.2	0
42	Stability of a secondâ€•order method for phase change in porous media flow. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800021.	0.2	0
43	A posteriori error estimation for an augmented mixed-primal method applied to sedimentationâ€“consolidation systems. Journal of Computational Physics, 2018, 367, 322-346.	1.9	11
44	Error analysis of an augmented mixed method for the Navierâ€“Stokes problem with mixed boundary conditions. IMA Journal of Numerical Analysis, 2018, 38, 1452-1484.	1.5	13
45	Mixed and discontinuous finite volume element schemes for the optimal control of immiscible flow in porous media. Computers and Mathematics With Applications, 2018, 76, 923-937.	1.4	2
46	On a vorticity-based formulation for reaction-diffusion-Brinkman systems. Networks and Heterogeneous Media, 2018, 13, 69-94.	0.5	12
47	Integrated Heartâ€”Coupling multiscale and multiphysics models for the simulation of the cardiac function. Computer Methods in Applied Mechanics and Engineering, 2017, 314, 345-407.	3.4	179
48	Partitioned coupling of advectionâ€“diffusionâ€“reaction systems and Brinkman flows. Journal of Computational Physics, 2017, 344, 281-302.	1.9	18
49	An augmented stressâ€based mixed finite element method for the steady state Navierâ€Stokes equations with nonlinear viscosity. Numerical Methods for Partial Differential Equations, 2017, 33, 1692-1725.	2.0	15
50	Nonlinear diffusion and thermo-electric coupling in a two-variable model of cardiac action potential. Chaos, 2017, 27, 093919.	1.0	21
51	A note on stress-driven anisotropic diffusion and its role in active deformable media. Journal of Theoretical Biology, 2017, 430, 221-228.	0.8	38
52	A posteriori error analysis of a fully-mixed formulation for the Brinkmanâ€“Darcy problem. Calcolo, 2017, 54, 1491-1519.	0.6	7
53	Stability analysis and finite volume element discretization for delay-driven spatio-temporal patterns in a predatorâ€“prey model. Mathematics and Computers in Simulation, 2017, 132, 28-52.	2.4	9
54	Mixed Methods for a Stream-Function â€“ Vorticity Formulation of the Axisymmetric Brinkman Equations. Journal of Scientific Computing, 2017, 71, 348-364.	1.1	6

#	Article	IF	Citations
55	Discontinuous Finite Volume Element Methods for the Optimal Control ofÂBrinkman Equations. Springer Proceedings in Mathematics and Statistics, 2017, , 307-315.	0.1	2
56	A posteriorierror analysis for a viscous flow-transport problem. ESAIM: Mathematical Modelling and Numerical Analysis, 2016, 50, 1789-1816.	0.8	22
57	A vorticity-based fully-mixed formulation for the 3D Brinkmanâ€“Darcy problem. Computer Methods in Applied Mechanics and Engineering, 2016, 307, 68-95.	3.4	18
58	Locking-Free Finite Element Methods for Poroelasticity. SIAM Journal on Numerical Analysis, 2016, 54, 2951-2973.	1.1	72
59	A posteriori error analysis of an augmented mixed method for the Navierâ€“Stokes equations with nonlinear viscosity. Computers and Mathematics With Applications, 2016, 72, 2289-2310.	1.4	20
60	Mixed finite element â€“ discontinuous finite volume element discretization of a general class of multicontinuum models. Journal of Computational Physics, 2016, 322, 666-688.	1.9	19
61	Pure vorticity formulation and Galerkin discretization for the Brinkman equations. IMA Journal of Numerical Analysis, 2016, , drw056.	1.5	4
62	A discontinuous method for oilâ€“water flow in heterogeneous porous media. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 763-764.	0.2	0
63	A priori and a posteriori error analysis of a mixed scheme for the Brinkman problem. Numerische Mathematik, 2016, 133, 781-817.	0.9	27
64	Discontinuous approximation of viscous two-phase flow in heterogeneous porous media. Journal of Computational Physics, 2016, 321, 126-150.	1.9	13
65	A mixed-primal finite element approximation of a sedimentationâ€“consolidation system. Mathematical Models and Methods in Applied Sciences, 2016, 26, 867-900.	1.7	18
66	Turing pattern dynamics and adaptive discretization for a super-diffusive Lotka-Volterra model. Journal of Mathematical Biology, 2016, 72, 1441-1465.	0.8	15
67	A mixed finite element method for Darcyâ€™s equations with pressure dependent porosity. Mathematics of Computation, 2015, 85, 1-33.	1.1	17
68	Stabilized mixed approximation of axisymmetric Brinkman flows. ESAIM: Mathematical Modelling and Numerical Analysis, 2015, 49, 855-874.	0.8	19
69	An augmented mixed-primal finite element method for a coupled flow-transport problem. ESAIM: Mathematical Modelling and Numerical Analysis, 2015, 49, 1399-1427.	0.8	33
70	Finite element and finite volume-element simulation of pseudo-ECGs and cardiac alternans. Mathematical Methods in the Applied Sciences, 2015, 38, 1046-1058.	1.2	12
71	Solvability analysis and numerical approximation of linearized cardiac electromechanics. Mathematical Models and Methods in Applied Sciences, 2015, 25, 959-993.	1.7	10
72	New fully-mixed finite element methods for the Stokesâ€“Darcy coupling. Computer Methods in Applied Mechanics and Engineering, 2015, 295, 362-395.	3.4	48

#	Article	IF	Citations
73	Primal-mixed formulations for reactionâ€“diffusion systems on deforming domains. Journal of Computational Physics, 2015, 299, 320-338.	1.9	13
74	A Three-dimensional Continuum Model of Active Contraction in Single Cardiomyocytes. Modeling, Simulation and Applications, 2015, , 157-176.	1.3	7
75	Equal Order Discontinuous Finite Volume Element Methods for the Stokes Problem. Journal of Scientific Computing, 2015, 65, 956-978.	1.1	16
76	An augmented velocityâ€“vorticityâ€“pressure formulation for the Brinkman equations. International Journal for Numerical Methods in Fluids, 2015, 79, 109-137.	0.9	36
77	Discontinuous finite volume element discretization for coupled flowâ€“transport problems arising in models of sedimentation. Journal of Computational Physics, 2015, 299, 446-471.	1.9	25
78	Numerical solution of a multidimensional sedimentation problem using finite volume-element methods. Applied Numerical Mathematics, 2015, 95, 280-291.	1.2	21
79	Mathematical modelling of active contraction in isolated cardiomyocytes. Mathematical Medicine and Biology, 2014, 31, 259-283.	0.8	52
80	Thermodynamically consistent orthotropic activation model capturing ventricular systolic wall thickening in cardiac electromechanics. European Journal of Mechanics, A/Solids, 2014, 48, 129-142.	2.1	82
81	Finite volume element approximation of an inhomogeneous Brusselator model with cross-diffusion. Journal of Computational Physics, 2014, 256, 806-823.	1.9	25
82	On Numerical Methods for Hyperbolic Conservation Laws and Related Equations Modelling Sedimentation of Solid-Liquid Suspensions. Springer Proceedings in Mathematics and Statistics, 2014, , 23-68.	0.1	1
83	Convergence of a stabilized discontinuous Galerkin method for incompressible nonlinear elasticity. Advances in Computational Mathematics, 2013, 39, 425-443.	0.8	14
84	An augmented mixed finite element method for the vorticityâ€“velocityâ€“pressure formulation of the Stokes equations. Computer Methods in Applied Mechanics and Engineering, 2013, 267, 261-274.	3.4	9
85	Mathematical analysis and numerical simulation of pattern formation under cross-diffusion. Nonlinear Analysis: Real World Applications, 2013, 14, 601-612.	0.9	56
86	Activation Models for the Numerical Simulation of Cardiac Electromechanical Interactions. , 2013, , 189-201.		5
87	Fully Eulerian finite element approximation of a fluidâ€structure interaction problem in cardiac cells. International Journal for Numerical Methods in Engineering, 2013, 96, 712-738.	1.5	20
88	Simulation of an epidemic model with nonlinear cross-diffusion. , 2012, , 331-338.		1
89	A finite volume element method for simulating secondary settling tanks. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 667-668.	0.2	0
90	A Stabilized Finite Volume Element Formulation for Sedimentation-Consolidation Processes. SIAM Journal of Scientific Computing, 2012, 34, B265-B289.	1.3	37

#	Article	IF	Citations
91	Orthotropic active strain models for the numerical simulation of cardiac biomechanics. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 761-788.	1.0	76
92	Analysis of an optimal control problem for the tridomain model in cardiac electrophysiology. Journal of Mathematical Analysis and Applications, 2012, 388, 231-247.	0.5	12
93	An active strain electromechanical model for cardiac tissue. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 52-71.	1.0	69
94	A Two-dimensional Model of Pedestrian Flow Generating Pattern Formation. Series in Contemporary Applied Mathematics, 2012, , 304-311.	0.8	0
95	Analysis of a finite volume element method for the Stokes problem. Numerische Mathematik, 2011, 118, 737-764.	0.9	20
96	Active strain and activation models in cardiac electromechanics. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 119-120.	0.2	2
97	A fully adaptive numerical approximation for a two-dimensional epidemic model with nonlinear cross-diffusion. Nonlinear Analysis: Real World Applications, 2011, 12, 2888-2903.	0.9	30
98	ANALYSIS OF A FINITE VOLUME METHOD FOR A CROSS-DIFFUSION MODEL IN POPULATION DYNAMICS. Mathematical Models and Methods in Applied Sciences, 2011, 21, 307-344.	1.7	70
99	An adaptive finite-volume method for a model of two-phase pedestrian flow. Networks and Heterogeneous Media, 2011, 6, 401-423.	0.5	22
100	A finite volume scheme for cardiac propagation in media with isotropic conductivities. Mathematics and Computers in Simulation, 2010, 80, 1821-1840.	2.4	11
101	Adaptive Multiresolution Methods for the Simulation ofÂWaves in Excitable Media. Journal of Scientific Computing, 2010, 43, 261-290.	1.1	24
102	A multiresolution spaceâ€time adaptive scheme for the bidomain model in electrocardiology. Numerical Methods for Partial Differential Equations, 2010, 26, 1377-1404.	2.0	28
103	Adaptive Multiresolution Simulation of Waves in Electrocardiology. , 2010, , 199-207.		2
104	On a doubly nonlinear diffusion model of chemotaxis with prevention of overcrowding. Mathematical Methods in the Applied Sciences, 2009, 32, 1704-1737.	1.2	16
105	Adaptive multiresolution schemes with local time stepping for two-dimensional degenerate reactionâ€“diffusion systems. Applied Numerical Mathematics, 2009, 59, 1668-1692.	1.2	24
106	Fully adaptive multiresolution schemes for strongly degenerate parabolic equations with discontinuous flux. Journal of Engineering Mathematics, 2008, 60, 365-385.	0.6	14
107	Adaptive multiresolution schemes for reaction-diffusion systems. Proceedings in Applied Mathematics and Mechanics, 2008, 8, 10969-10970.	0.2	0
108	Fully adaptive multiresolution schemes for strongly degenerate parabolic equations in one space dimension. ESAIM: Mathematical Modelling and Numerical Analysis, 2008, 42, 535-563.	0.8	21

#	Article	IF	Citations
109	Multiresolution schemes for an extended clarifierâ€thickener model. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1041803-1041804.	0.2	0
110	A fully-mixed finite element method for the steady state Oberbeckâ€“Boussinesq system. SMAI Journal of Computational Mathematics, 0, 6, 125-157.	0.0	9