# Anthony J Roberts

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/1883118/publications.pdf

Version: 2024-02-01

| | | | |
|---|---|---|---|
| 81 papers | 1,630 citations | 331670 21 h-index | 330143 37 g-index |
| 87 all docs | 87 docs citations | 87 times ranked | 687 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Largeâ€scale simulation of shallow water waves via computation only on small staggered patches. International Journal for Numerical Methods in Fluids, 2021, 93, 953-977. | 1.6 | 5 |
| 2 | A toolbox of equation-free functions in Matlab/Octave for efficient system level simulation. Numerical Algorithms, 2021, 87, 1729-1748. | 1.9 | 8 |
| 3 | Rigorous modelling of nonlocal interactions determines a macroscale advection-diffusion PDE. MATRIX Book Series, 2021, , 423-437. | 0.2 | 0 |
| 4 | An Equation Free Algorithm Accurately Simulates Macroscale Shocks Arising From Heterogeneous Microscale Systems. IEEE Journal on Multiscale and Multiphysics Computational Techniques, 2021, 6, 8-15. | 2.2 | 2 |
| 5 | Nonlinear emergent macroscale PDEs, with error bound, for nonlinear microscale systems. SN Applied Sciences, 2021, 3, 1. | 2.9 | 1 |
| 6 | Equation-free patch scheme for efficient computational homogenisation via self-adjoint coupling. Numerische Mathematik, 2021, 149, 229-272. | 1.9 | 4 |
| 7 | Linking Machine Learning with Multiscale Numerics: Data-Driven Discovery of Homogenized Equations. Jom, 2020, 72, 4444-4457. | 1.9 | 20 |
| 8 | Normal forms and invariant manifolds for nonlinear, non-autonomous PDEs, viewed as ODEs in infinite dimensions. Journal of Differential Equations, 2019, 267, 7263-7312. | 2.2 | 2 |
| 9 | LYAPUNOV EXPONENTS OF THE KURAMOTOâ€“SIVASHINSKY PDE. ANZIAM Journal, 2019, 61, 270-285. | 0.2 | 13 |
| 10 | COUPLE MICROSCALE PERIODIC PATCHES TO SIMULATE MACROSCALE EMERGENT DYNAMICS. ANZIAM Journal, 2018, 59, 313-334. | 0.2 | 3 |
| 11 | Smooth subgrid fields underpin rigorous closure in spatial discretisation of reactionâ€“advectionâ€“diffusion PDEs. Applied Numerical Mathematics, 2018, 132, 91-110. | 2.1 | 2 |
| 12 | Boundary conditions for macroscale waves in an elastic system with microscale heterogeneity. IMA Journal of Applied Mathematics, 2018, 83, 347-379. | 1.6 | 3 |
| 13 | Resolution of subgrid microscale interactions enhances the discretisation of nonautonomous partial differential equations. Applied Mathematics and Computation, 2017, 304, 164-179. | 2.2 | 5 |
| 14 | Good coupling for the multiscale patch scheme on systems with microscale heterogeneity. Journal of Computational Physics, 2017, 337, 154-174. | 3.8 | 14 |
| 15 | Slowly varying, macroscale models emerge from microscale dynamics over multiscale domains. IMA Journal of Applied Mathematics, 2017, 82, 971-1012. | 1.6 | 5 |
| 16 | Accuracy of Patch Dynamics with Mesoscale Temporal Coupling for Efficient Massively Parallel Simulations. SIAM Journal of Scientific Computing, 2016, 38, C335-C371. | 2.8 | 4 |
| 17 | Surface deformation and shear flow in ligand mediated cell adhesion. Journal of Mathematical Biology, 2016, 73, 1035-1052. | 1.9 | 8 |
| 18 | Modelling suspended sediment in environmental turbulent fluids. Journal of Engineering Mathematics, 2016, 98, 187-204. | 1.2 | 4 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Multiscale modelling couples patches of non-linear wave-like simulations. IMA Journal of Applied Mathematics, 2016, 81, 228-254. | 1.6 | 11 |
| 20 | Macroscale, slowly varying, models emerge from the microscale dynamics: Fig. 1.. IMA Journal of Applied Mathematics, 2015, 80, 1492-1518. | 1.6 | 13 |
| 21 | Numerical integration of ordinary differential equations with rapidly oscillatory factors. Journal of Computational and Applied Mathematics, 2015, 282, 54-70. | 2.0 | 2 |
| 22 | Diffusion Approximation for Self-Similarity of Stochastic Advection in Burgersâ€™ Equation. Communications in Mathematical Physics, 2015, 333, 1287-1316. | 2.2 | 11 |
| 23 | Approximation of the random inertial manifold of singularly perturbed stochastic wave equations. Stochastics and Dynamics, 2014, 14, 1350018. | 1.2 | 6 |
| 24 | Large Deviation Principle for Singularly Perturbed Stochastic Damped Wave Equations. Stochastic Analysis and Applications, 2014, 32, 50-60. | 1.5 | 10 |
| 25 | A dynamical systems approach to simulating macroscale spatial dynamics in multiple dimensions. Journal of Engineering Mathematics, 2014, 86, 175-207. | 1.2 | 16 |
| 26 | Self-Similarity and Attraction in Stochastic Nonlinear Reaction-Diffusion Systems. SIAM Journal on Applied Dynamical Systems, 2013, 12, 450-486. | 1.6 | 6 |
| 27 | Slow manifold and averaging for slowâ€“fast stochastic differential system. Journal of Mathematical Analysis and Applications, 2013, 398, 822-839. | 1.0 | 31 |
| 28 | Averaging approximation to singularly perturbed nonlinear stochastic wave equations. Journal of Mathematical Physics, 2012, 53, 062702. | 1.1 | 10 |
| 29 | Large deviations and approximations for slowâ€“fast stochastic reactionâ€“diffusion equations. Journal of Differential Equations, 2012, 253, 3501-3522. | 2.2 | 29 |
| 30 | Average and deviation for slowâ€“fast stochastic partial differential equations. Journal of Differential Equations, 2012, 253, 1265-1286. | 2.2 | 89 |
| 31 | Macroscopic discrete modelling of stochastic reaction-diffusion equations on a periodic domain. Discrete and Continuous Dynamical Systems, 2011, 31, 253-273. | 0.9 | 1 |
| 32 | Choose inter-element coupling to preserve self-adjoint dynamics in multiscale modelling and computation. Applied Numerical Mathematics, 2010, 60, 949-973. | 2.1 | 4 |
| 33 | Model Dynamics across Multiple Length and Time Scales on a Spatial Multigrid. Multiscale Modeling and Simulation, 2009, 7, 1525-1548. | 1.6 | 7 |
| 34 | Equation-Free Computation: An Overview of Patch Dynamics. , 2009, , 216-246. | | 9 |
| 35 | The inertial dynamics of thin film flow of non-Newtonian fluids. Physics Letters, Section A: General, Atomic and Solid State Physics, 2008, 372, 1607-1611. | 2.1 | 3 |
| 36 | Normal form transforms separate slow and fast modes in stochastic dynamical systems. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 12-38. | 2.6 | 78 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | Elementary Calculus of Financial Mathematics. , 2008, , . | | 35 |
| 38 | General Tooth Boundary Conditions for Equation Free Modeling. SIAM Journal of Scientific Computing, 2007, 29, 1495-1510. | 2.8 | 37 |
| 39 | Accurately Model the Kuramoto--Sivashinsky Dynamics with Holistic Discretization. SIAM Journal on Applied Dynamical Systems, 2006, 5, 365-402. | 1.6 | 5 |
| 40 | An accurate and comprehensive model of thin fluid flows with inertia on curved substrates. Journal of Fluid Mechanics, 2006, 553, 33. | 3.4 | 32 |
| 41 | Resolving the Multitude of Microscale Interactions Accurately Models Stochastic Partial Differential Equations. LMS Journal of Computation and Mathematics, 2006, 9, 193-221. | 0.9 | 15 |
| 42 | Nonlinear Analysis of Rubber-Based Polymeric Materials with Thermal Relaxation Models. Numerical Heat Transfer; Part A: Applications, 2005, 47, 549-569. | 2.1 | 16 |
| 43 | Modelling nonlinear dynamics of shape-memory-alloys with approximate models of coupled thermoelasticity. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2003, 83, 93-104. | 1.6 | 17 |
| 44 | Modelling the Dynamics of Turbulent Floods. SIAM Journal on Applied Mathematics, 2003, 63, 423-458. | 1.8 | 5 |
| 45 | A holistic finite difference approach models linear dynamics consistently. Mathematics of Computation, 2002, 72, 247-263. | 2.1 | 27 |
| 46 | A lubrication model of coating flows over a curved substrate in space. Journal of Fluid Mechanics, 2002, 454, 235-261. | 3.4 | 76 |
| 47 | Phase transitions in shape memory alloys with hyperbolic heat conduction and differential-algebraic models. Computational Mechanics, 2002, 29, 16-26. | 4.0 | 28 |
| 48 | Holistic discretization ensures fidelity to Burgers' equation. Applied Numerical Mathematics, 2001, 37, 371-396. | 2.1 | 22 |
| 49 | Modeling of Sample Dynamics in Rectangular Asymmetrical Flow Field-Flow Fractionation Channels. Analytical Chemistry, 2000, 72, 4331-4345. | 6.5 | 6 |
| 50 | Advectionâ€dispersion in symmetric fieldâ€flow fractionation channels. Journal of Mathematical Chemistry, 1999, 26, 27-46. | 1.5 | 1 |
| 51 | Bowâ€"like free surfaces under gravity. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1997, 355, 665-677. | 3.4 | 3 |
| 52 | Low-dimensional modelling of dynamics via computer algebra. Computer Physics Communications, 1997, 100, 215-230. | 7.5 | 56 |
| 53 | On the observability of finite-depth short-crested water waves. Journal of Fluid Mechanics, 1996, 322, 1-19. | 3.4 | 16 |
| 54 | Low-dimensional models of thin film fluid dynamics. Physics Letters, Section A: General, Atomic and Solid State Physics, 1996, 212, 63-71. | 2.1 | 30 |

| # | Article | IF | Citations |
|---|---|---|---|
| 55 | On the low-dimensional modelling of Stratonovich stochastic differential equations. Physica A: Statistical Mechanics and Its Applications, 1996, 225, 62-80. | 2.6 | 40 |
| 56 | Internal structure of extreme standing waves on deep water. Physics of Fluids, 1996, 8, 697-703. | 4.0 | 0 |
| 57 | Initial conditions for models of dynamical systems. Physica D: Nonlinear Phenomena, 1995, 85, 126-141. | 2.8 | 42 |
| 58 | Standing waves in deep water: Their stability and extreme form. Physics of Fluids A, Fluid Dynamics, 1992, 4, 259-269. | 1.6 | 61 |
| 59 | Boundary conditions for approximate differential equations. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1992, 34, 54-80. | 0.2 | 32 |
| 60 | Centre manifolds of forced dynamical systems. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1991, 32, 401-436. | 0.2 | 16 |
| 61 | Reflection of nonlinear deep-water waves incident onto a wedge of arbitrary angle. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1990, 32, 61-96. | 0.2 | 3 |
| 62 | A description of the long-term behaviour of absorbing continuous-time Markov chains using a centre manifold. Advances in Applied Probability, 1990, 22, 111-128. | 0.7 | 15 |
| 63 | A Centre Manifold Description of Contaminant Dispersion in Channels with Varying Flow Properties. SIAM Journal on Applied Mathematics, 1990, 50, 1547-1565. | 1.8 | 140 |
| 64 | The Utility of an Invariant Manifold Description of the Evolution of a Dynamical System. SIAM Journal on Mathematical Analysis, 1989, 20, 1447-1458. | 1.9 | 52 |
| 65 | Appropriate initial conditions for asymptotic descriptions of the long term evolution of dynamical systems. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1989, 31, 48-75. | 0.2 | 58 |
| 66 | A variational approach to the problem of deep-water waves forming a circular caustic. Journal of Fluid Mechanics, 1988, 194, 581. | 3.4 | 4 |
| 67 | The application of centre-manifold theory to the evolution of system which vary slowly in space. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1988, 29, 480-500. | 0.2 | 52 |
| 68 | Simple examples of the derivation of amplitude equations for systems of equations possessing bifurcations. Journal of the Australian Mathematical Society Series B Applied Mathematics, 1985, 27, 48-65. | 0.2 | 21 |
| 69 | An analysis of near-marginal, mildly penetrative convection with heat flux prescribed on the boundaries. Journal of Fluid Mechanics, 1985, 158, 71-93. | 3.4 | 21 |
| 70 | Highly nonlinear short-crested water waves. Journal of Fluid Mechanics, 1983, 135, 301. | 3.4 | 93 |
| 71 | Notes on long-crested water waves. Journal of Fluid Mechanics, 1983, 135, 323. | 3.4 | 38 |
| 72 | Slow-burning instabilities of Dufort-Frankel finite differencing. ANZIAM Journal, 0, 63, 23-38. | 0.0 | 1 |

| # | Article | IF | Citations |
| --- | --- | --- | --- |
| 73 | Holistic finite differences accurately model the dynamics of the Kuramoto-Sivashinsky equation. ANZIAM Journal, 0, 42, 918. | 0.0 | 12 |
| 74 | Simple and fast multigrid solution of Poisson's equation using diagonally oriented grids. ANZIAM Journal, 0, 43, 1. | 0.0 | 12 |
| 75 | Holistic discretisation of shear dispersion in a two-dimensional channel. ANZIAM Journal, 0, 44, 512. | 0.0 | 4 |
| 76 | Derive boundary conditions for holistic discretisations of Burgers' equation. ANZIAM Journal, 0, 44, 664. | 0.0 | 6 |
| 77 | A step towards holistic discretisation of stochastic partial differential equations. ANZIAM Journal, 0, 45, 1. | 0.0 | 20 |
| 78 | Higher order accuracy in the gap-tooth scheme for large-scale dynamics using microscopic simulators. ANZIAM Journal, 0, 46, 637. | 0.0 | 13 |
| 79 | The dynamics of the vertical structure of turbulence in flood flows. ANZIAM Journal, 0, 48, 573. | 0.0 | 2 |
| 80 | Multiscale modelling couples patches of wave-like simulations. ANZIAM Journal, 0, 54, 153. | 0.0 | 6 |
| 81 | Couple microscale periodic patches to simulate macroscale emergent dynamics. ANZIAM Journal, 0, 59, 313. | 0.0 | 0 |