# Benito Chen-Charpentier

List of Publications by Year
in descending order



| 103 | 1,919 | 304368 22 | 288905 40 |
|---|---|---|---|
| papers | citations | h-index | g-index |

| 106 | 106 | 106 | 1439 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Numerical Evidence for the Existence of New Types of Gravity Waves of Permanent Form on Deep Water. Studies in Applied Mathematics, 1980, 62, 1-21. | 1.1 | 124 |
| 2 | Steady Gravityâ€Capillary Waves On Deep Waterâ€"1. Weakly Nonlinear Waves. Studies in Applied Mathematics, 1979, 60, 183-210. | 1.1 | 116 |
| 3 | A fractional order epidemic model for the simulation of outbreaks of influenza A(H1N1). Mathematical Methods in the Applied Sciences, 2014, 37, 2218-2226. | 1.2 | 115 |
| 4 | Transient dynamics of terrestrial carbon storage: mathematical foundation and its applications. Biogeosciences, 2017, 14, 145-161. | 1.3 | 91 |
| 5 | Construction of nonstandard finite difference schemes for the SI and SIR epidemic models of fractional order. Mathematics and Computers in Simulation, 2016, 121, 48-63. | 2.4 | 83 |
| 6 | Network Model of Flow, Transport and Biofilm Effects in Porous Media. Transport in Porous Media, 1998, 30, 1-23. | 1.2 | 82 |
| 7 | Steady Gravityâ€Capillary Waves on Deep Waterâ€"II. Numerical Results for Finite Amplitude. Studies in Applied Mathematics, 1980, 62, 95-111. | 1.1 | 72 |
| 8 | An unconditionally positivity preserving scheme for advectionâ€"diffusion reaction equations. Mathematical and Computer Modelling, 2013, 57, 2177-2185. | 2.0 | 66 |
| 9 | Oscillatory behavior of two nonlinear microbial models of soil carbon decomposition. Biogeosciences, 2014, 11, 1817-1831. | 1.3 | 53 |
| 10 | Modeling plant virus propagation with delays. Journal of Computational and Applied Mathematics, 2017, 309, 611-621. | 1.1 | 50 |
| 11 | Combination of nonstandard schemes and Richardsonâ€™s extrapolation to improve the numerical solution of population models. Mathematical and Computer Modelling, 2010, 52, 1030-1036. | 2.0 | 46 |
| 12 | A nonstandard numerical scheme of predictorâ€"corrector type for epidemic models. Computers and Mathematics With Applications, 2010, 59, 3740-3749. | 1.4 | 46 |
| 13 | Responses of two nonlinear microbial models to warming and increased carbon input. Biogeosciences, 2016, 13, 887-902. | 1.3 | 43 |
| 14 | A mathematical model for the effect of obesity on cancer growth and on the immune system response. Applied Mathematical Modelling, 2016, 40, 4908-4920. | 2.2 | 43 |
| 15 | Transit times and mean ages for nonautonomous and autonomous compartmental systems. Journal of Mathematical Biology, 2016, 73, 1379-1398. | 0.8 | 40 |
| 16 | Two-dimensional modeling of microscale transport and biotransformation in porous media. Numerical Methods for Partial Differential Equations, 1994, 10, 65-83. | 2.0 | 38 |
| 17 | Macroscale Properties of Porous Media from a Network Model of Biofilm Processes. Transport in Porous Media, 1998, 31, 39-66. | 1.2 | 37 |
| 18 | Epidemic models with random coefficients. Mathematical and Computer Modelling, 2010, 52, 1004-1010. | 2.0 | 34 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Random coefficient differential equation models for bacterial growth. Mathematical and Computer Modelling, 2009, 50, 885-895. | 2.0 | 30 |
| 20 | A model of biological control of plant virus propagation with delays. Journal of Computational and Applied Mathematics, 2018, 330, 855-865. | 1.1 | 30 |
| 21 | Discretizations of nonlinear differential equations using explicit finite order methods. Journal of Computational and Applied Mathematics, 1998, 90, 171-183. | 1.1 | 26 |
| 22 | A random differential transform method: Theory and applications. Applied Mathematics Letters, 2012, 25, 1490-1494. | 1.5 | 24 |
| 23 | Numerical simulation of biofilm growth in porous media. Journal of Computational and Applied Mathematics, 1999, 103, 55-66. | 1.1 | 23 |
| 24 | Mathematical modeling of crime as a social epidemic. Journal of Interdisciplinary Mathematics, 2018, 21, 623-643. | 0.4 | 23 |
| 25 | Effects of the obesity on optimal control schedules of chemotherapy on a cancerous tumor. Journal of Computational and Applied Mathematics, 2017, 309, 603-610. | 1.1 | 22 |
| 26 | Ionic silicon improves endothelial cells' survival under toxic oxidative stress by overexpressing angiogenic markers and antioxidant enzymes. Journal of Tissue Engineering and Regenerative Medicine, 2018, 12, 2203-2220. | 1.3 | 22 |
| 27 | ThreeâEDimensional Stability and Bifurcation of Capillary and Gravity Waves on Deep Water. Studies in Applied Mathematics, 1985, 72, 125-147. | 1.1 | 20 |
| 28 | Combined nonstandard numerical methods for ODEs with polynomial right-hand sides. Mathematics and Computers in Simulation, 2006, 73, 105-113. | 2.4 | 20 |
| 29 | Direct and indirect optimal control applied to plant virus propagation with seasonality and delays. Journal of Computational and Applied Mathematics, 2020, 380, 112983. | 1.1 | 19 |
| 30 | Analytic and numerical solutions of a Riccati differential equation with random coefficients. Journal of Computational and Applied Mathematics, 2013, 239, 208-219. | 1.1 | 18 |
| 31 | Polynomial Chaos for random fractional order differential equations. Applied Mathematics and Computation, 2014, 226, 123-130. | 1.4 | 18 |
| 32 | Quantifying rotavirus kinetics in the REH tumor cell line using in vitro data. Virus Research, 2018, 244, 53-63. | 1.1 | 18 |
| 33 | Non-standard Numerical Methods Applied to Subsurface Biobarrier Formation Models in Porous Media. Bulletin of Mathematical Biology, 1999, 61, 779-798. | 0.9 | 17 |
| 34 | Dynamical analysis of the transmission of seasonal diseases using the differential transformation method. Mathematical and Computer Modelling, 2009, 50, 765-776. | 2.0 | 17 |
| 35 | Stability analysis of a Komarova type model for the interactions of osteoblast and osteoclast cells during bone remodeling. Mathematical Biosciences, 2015, 264, 29-37. | 0.9 | 16 |
| 36 | Parameter estimation using polynomial chaos and maximum likelihood. International Journal of Computer Mathematics, 2014, 91, 336-346. | 1.0 | 15 |

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|---|---|---|---|
| 37 | A mathematical model of bone remodeling with delays. Journal of Computational and Applied Mathematics, 2016, 291, 76-84. | 1.1 | 14 |
| 38 | Nonstandard discrete approximationspreserving stability properties of continuous mathematical models. Mathematical and Computer Modelling, 2004, 40, 481-490. | 2.0 | 13 |
| 39 | Mathematical modeling of bioremediation of trichloroethylene in aquifers. Computers and Mathematics With Applications, 2008, 56, 645-656. | 1.4 | 13 |
| 40 | Numerical simulation of multi-species biofilms in porous media for different kinetics. Mathematics and Computers in Simulation, 2009, 79, 1846-1861. | 2.4 | 12 |
| 41 | Biofilm growth on medical implants with randomness. Mathematical and Computer Modelling, 2011, 54, 1682-1686. | 2.0 | 12 |
| 42 | A model for coupling fire and insect outbreak in forests. Ecological Modelling, 2014, 286, 26-36. | 1.2 | 12 |
| 43 | Modeling plant virus propagation with seasonality. Journal of Computational and Applied Mathematics, 2019, 345, 310-319. | 1.1 | 12 |
| 44 | Frobenius-Chebyshev polynomial approximations with a priori error bounds for nonlinear initial value differential problems. Computers and Mathematics With Applications, 2001, 41, 269-280. | 1.4 | 11 |
| 45 | Numerical simulation of dual-species biofilms in porous media. Applied Numerical Mathematics, 2003, 47, 377-389. | 1.2 | 11 |
| 46 | Chebyshev polynomial approximations for nonlinear differential initial value problems. Nonlinear Analysis: Theory, Methods & Applications, 2005, 63, e629-e637. | 0.6 | 11 |
| 47 | Uncertainty Quantification in Simulations of Epidemics Using Polynomial Chaos. Computational and Mathematical Methods in Medicine, 2012, 2012, 1-8. | 0.7 | 11 |
| 48 | Constructing adaptive generalized polynomial chaos method to measure the uncertainty in continuous models: A computational approach. Mathematics and Computers in Simulation, 2015, 109, 113-129. | 2.4 | 11 |
| 49 | Modeling the Macrophage-Mediated Inflammation Involved in the Bone Fracture Healing Process. Mathematical and Computational Applications, 2019, 24, 12. | 0.7 | 11 |
| 50 | Developing a Mathematical Model of Intracellular Calcium Dynamics for Evaluating Combined Anticancer Effects of Afatinib and RP4010 in Esophageal Cancer. International Journal of Molecular Sciences, 2022, 23, 1763. | 1.8 | 11 |
| 51 | Nonstandard methods for the convective transport equation with nonlinear reactions. Numerical Methods for Partial Differential Equations, 1998, 14, 467-485. | 2.0 | 10 |
| 52 | Nonstandard methods for the convective-dispersive transport equation with nonlinear reactions. Numerical Methods for Partial Differential Equations, 1999, 15, 617-624. | 2.0 | 10 |
| 53 | Some recommendations for applying gPC (generalized polynomial chaos) to modeling: An analysis through the Airy random differential equation. Applied Mathematics and Computation, 2013, 219, 4208-4218. | 1.4 | 10 |
| 54 | The truncation error of the two-variable chebyshev series expansions. Computers and Mathematics With Applications, 2003, 45, 1647-1653. | 1.4 | 9 |

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|---|---|---|---|
| 55 | Positive numerical solution for a nonarbitrage liquidity model using nonstandard finite difference schemes. Numerical Methods for Partial Differential Equations, 2014, 30, 210-221. | 2.0 | 9 |
| 56 | Fractional Order Financial Models for Awareness and Trial Advertising Decisions. Computational Economics, 2016, 48, 555-568. | 1.5 | 9 |
| 57 | Mathematical Modeling and Characterization of the Spread of Chikungunya in Colombia. Mathematical and Computational Applications, 2019, 24, 6. | 0.7 | 9 |
| 58 | RELIABLE FINITE DIFFERENCE SCHEMES WITH APPLICATIONS IN MATHEMATICAL ECOLOGY. , 2005, , 249-285. | | 8 |
| 59 | Modeling the effects of inflammation in bone fracture healing. AIP Conference Proceedings, 2017, , . | 0.3 | 8 |
| 60 | Nonstandard Eulerianâ€“Lagrangian methods for multi-dimensional reactive transport problems. Applied Numerical Mathematics, 2004, 49, 225-243. | 1.2 | 7 |
| 61 | Stochastic Modeling of Plant Virus Propagation with Biological Control. Mathematics, 2021, 9, 456. | 1.1 | 6 |
| 62 | Numerical treatment of leaky aquifers in the short time range. Water Resources Research, 1982, 18, 557-562. | 1.7 | 5 |
| 63 | Consolidation Curves for Clays. Journal of Geotechcnical Engineering, 1983, 109, 1303-1312. | 0.4 | 5 |
| 64 | Chaos in the one-dimensional wave equation. Applied Mathematics Letters, 2005, 18, 85-90. | 1.5 | 5 |
| 65 | Constructing accurate polynomial approximations for nonlinear differential initial value problems. Applied Mathematics and Computation, 2007, 193, 523-534. | 1.4 | 5 |
| 66 | Upscaling from discrete to continuous mathematical models of two interacting populations. Computers and Mathematics With Applications, 2013, 66, 1606-1612. | 1.4 | 5 |
| 67 | Virus propagation with randomness. Mathematical and Computer Modelling, 2013, 57, 1816-1821. | 2.0 | 5 |
| 68 | Modeling Chagas Disease at Population Level to Explain Venezuela's Real Data. Osong Public Health and Research Perspectives, 2015, 6, 288-301. | 0.7 | 5 |
| 69 | A classification of slow convergence near parametric periodic points of discrete dynamical systems. International Journal of Computer Mathematics, 2016, 93, 1011-1021. | 1.0 | 5 |
| 70 | A Mathematical Model for Intimate Partner Violence. Mathematical and Computational Applications, 2019, 24, 29. | 0.7 | 5 |
| 71 | Combining Polynomial Chaos Expansions and the Random Variable Transformation Technique to Approximate the Density Function of Stochastic Problems, Including Some Epidemiological Models. Symmetry, 2019, 11, 43. | 1.1 | 5 |
| 72 | A simple model of immune and muscle cell crosstalk during muscle regeneration. Mathematical Biosciences, 2021, 333, 108543. | 0.9 | 5 |

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|---|---|---|---|
| 73 | A high-order Godunov method for one-dimensional convection-diffusion-reaction problems. Numerical Methods for Partial Differential Equations, 2000, 16, 495-512. | 2.0 | 4 |
| 74 | Required number of location-years for estimating functional lower developmental thresholds and required thermal summations of insects: The first emergence of adult Apthona nigriscutis Foudras as an example. International Journal of Pest Management, 2002, 48, 147-154. | 0.9 | 4 |
| 75 | Simulation of thick biofilm growth at the microscale. Applied Numerical Mathematics, 2002, 40, 261-271. | 1.2 | 4 |
| 76 | Optimal control of plant virus propagation. Mathematical Methods in the Applied Sciences, 2020, 43, 8147-8157. | 1.2 | 4 |
| 77 | Modeling of Subsurface Biobarrier Formation. Journal of Hazardous Substance Research, 2001, 3, . | 0.3 | 4 |
| 78 | Modeling of flow and transport at the microscale. Applied Numerical Mathematics, 2002, 40, 245-259. | 1.2 | 3 |
| 79 | Mathematical Modeling of Chemoatractant Effects on Cell Movement. , 2011, , . | | 3 |
| 80 | Discrete and continuous approaches to modeling cell movement in the presence of a foreign stimulus. Computers and Mathematics With Applications, 2012, 64, 167-174. | 1.4 | 3 |
| 81 | Multidimensional Discrete Dynamical Systems with Slow Behavior. Differential Equations and Dynamical Systems, 2017, 29, 645. | 0.5 | 3 |
| 82 | Delays in Plant Virus Models and Their Stability. Mathematics, 2022, 10, 603. | 1.1 | 3 |
| 83 | Do the generalized polynomial chaos and FrÃ¶benius methods retain the statistical moments of random differential equations?. Applied Mathematics Letters, 2013, 26, 553-558. | 1.5 | 2 |
| 84 | A mathematical model of tree harvesting in age-structured forests subject to beetle infestations. Computational and Applied Mathematics, 2018, 37, 3365-3384. | 1.3 | 2 |
| 85 | Maximizing tree harvesting benefit from forests under insect infestation disturbances. PLoS ONE, 2018, 13, e0200575. | 1.1 | 2 |
| 86 | Mathematical Modeling of Physical Capital Diffusion Using a Spatial Solow Model: Application to Smuggling in Venezuela. Economies, 2022, 10, 164. | 1.2 | 2 |
| 87 | Layered Solutions to a Bistable Reaction-Diffusion Equation. Journal of Differential Equations, 1995, 117, 217-244. | 1.1 | 1 |
| 88 | Molecular dynamic simulations of gases using a split-Hamiltonian method. Applied Numerical Mathematics, 2001, 38, 21-48. | 1.2 | 1 |
| 89 | Analysis and Models in Interdisciplinary Mathematics. Abstract and Applied Analysis, 2014, 2014, 1-2. | 0.3 | 1 |
| 90 | Using models to advance medicine: mathematical modeling of post-myocardial infarction left ventricular remodeling. Computer Methods in Biomechanics and Biomedical Engineering, 2022, 25, 298-307. | 0.9 | 1 |

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|---|---|---|---|
| 91 | Delayed yield. An exact quasi-three dimensional model for free-aquifers. Advances in Water Resources, 1983, 6, 54-58. | 1.7 | 0 |
| 92 | A computer science approach for solving elliptic differential equations. Numerical Methods for Partial Differential Equations, 1995, 11, 573-590. | 2.0 | 0 |
| 93 | Numerical simulation of biofilm-forming bacteria and other microbes in porous media. Developments in Water Science, 2002, 47, 819-826. | 0.1 | 0 |
| 94 | Explicit mixed finite order Rungeâ€“Kutta methods. Applied Numerical Mathematics, 2003, 44, 21-30. | 1.2 | 0 |
| 95 | Biofilms in Porous Media: Mathematical Modeling and Numerical Simulation. , 2007, , 481-511. | | 0 |
| 96 | Polynomial approximation of nonlinear differential systems with prefixed accuracy. Applied Mathematics and Computation, 2011, 218, 1650-1657. | 1.4 | 0 |
| 97 | Analysis and Models in Interdisciplinary Mathematics 2016. Abstract and Applied Analysis, 2016, 2016, 1-1. | 0.3 | 0 |
| 98 | On the Inverse of the Caputo Matrix Exponential. Mathematics, 2019, 7, 1137. | 1.1 | 0 |
| 99 | Modeling the effects of growth factors on bone fracture healing. AIP Conference Proceedings, 2019, , . | 0.3 | 0 |
| 100 | Effects of a Discrete Time Delay on an HIV Pandemic. Springer Proceedings in Mathematics and Statistics, 2015, , 57-73. | 0.1 | 0 |
| 101 | Effects of discrete time delays and parameters variation on dynamical systems. Biomath, 2015, 4, . | 0.3 | 0 |
| 102 | A Continuous Model of Marital Relations with Stochastic Differential Equations. Mathematical and Computational Applications, 2021, 26, 3. | 0.7 | 0 |
| 103 | Viability of Pentadesma in reduced habitat ecosystems within two climatic regions with fruit harvesting. Journal of Biological Dynamics, 2022, 16, 207-235. | 0.8 | 0 |