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Qualifications

Applied and Numerical Mathematics, University of South Carolina
6 Aug 2013 → 17 Dec 2018
Award Date: 17 Dec 2018

Employment

School of Mathematical Sciences
Faculty of Science and Engineering
1 Feb 2023 → present

Partial Differential Equations Research Group

1 Feb 2023 → present

Research outputs

Theory of wetting dynamics with surface binding

Zhao, X., Liese, S., Honigmann, A., Jülicher, F. & Weber, C. A., 1 Oct 2024, In: New Journal of Physics. 26, 10, 103025.

A ternary mixture model with dynamic boundary conditions

Liu, S., Wu, Y. & Zhao, X., 2024, In: Mathematical Biosciences and Engineering. 21, 2, p. 2050-2083 34 p.

Nonlinear manipulation and analysis of large DNA datasets

Cui, M., Zhao, X., Reddavid, F. V., Gaillez, M. P., Heiden, S., Mannocci, L., Thompson, M. & Zhang, Y., 26 Aug 2022, In: Nucleic Acids Research. 50, 15, p. 8974-8985 12 p.

Thermodynamics of wetting, prewetting and surface phase transitions with surface binding

Zhao, X., Bartolucci, G., Honigmann, A., Jülicher, F. & Weber, C. A., Dec 2021, In: New Journal of Physics. 23, 12, 123003.

Controlling composition of coexisting phases via molecular transitions

Bartolucci, G., Adame-Arana, O., Zhao, X. & Weber, C. A., 2 Nov 2021, In: Biophysical Journal. 120, 21, p. 4682-4697 16 p.

Thermodynamically consistent hydrodynamic models of multi-component compressible fluid flows

Zhao, X., Qian, T. & Wang, Q., 2020, In: Communications in Mathematical Sciences. 18, 5, p. 1441-1468 28 p.

A second order fully-discrete linear energy stable scheme for a binary compressible viscous fluid model

Zhao, X. & Wang, Q., 15 Oct 2019, In: Journal of Computational Physics. 395, p. 382-409 28 p.

Second Order Linear Energy Stable Schemes for Allen-Cahn Equations with Nonlocal Constraints

Jing, X., Li, J., Zhao, X. & Wang, Q., 15 Jul 2019, In: Journal of Scientific Computing. 80, 1, p. 500-537 38 p.

A general strategy for numerical approximations of non-equilibrium models—Part I: Thermodynamical systems

Zhao, J. I. A., Yang, X., Gong, Y., Zhao, X., Yang, X., Li, J. U. N. & Wang, Q. I., 2018, In: International Journal of Numerical Analysis and Modeling. 15, 6, p. 884-918 35 p.