Changjian Xie

Contact Information

School of Mathematical Sciences
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https://stevencjxie8.com/html/default.html

Research Interests

Magnetic materials, Modeling and simulation, Numerical analysis, Machine learning, and its applications to mathematical physics, Molecular dynamics.

Education

School of Mathematical Sciences, Soochow University

Ph.D. candidate in Mathematics (expected July 2021)

- Advisor: Prof. Jingrun Chen
- Research Topic: Semi-implicit projection methods for Landau-Lifshitz equation

Hefei Normal University, Anhui Province, China

B.A. in Mathematics, July 2016

Experience

Visiting scholar to Penn State Univ., under the advisement of Prof. Xiantao Li (Nov. 2019–Oct. 2020), working on the molecular dynamics simulations.

Advanced Mathematics; Instructor (2019 Spring, Soochow Univ.)

AFEPack application for demagnetization calculation; visitor for Macau Univ. (25th, April, 2019)

Publications

Jingrun Chen, Cheng Wang, Changjian Xie. *Convergence analysis of a second-order semi-implicit projection method for Landau-Lifshitz equation (in review),* submitted to Appl. Numer. Math. (May, 2019).

Changjian Xie, García-Cervera, Cheng Wang, Zhennan Zhou, and Jingrun Chen. *Second-order semi-implicit projection methods for Landau-Lifshitz equation.* Accepted by J. Comp. Phys. Doi: 10.1016/j.jcp.2019.109104.

Panchi Li, Changjian Xie, Rui Du, Jingrun Chen, Xiaoping Wang. *Two improved Gauss-Seidel projection methods for Landau-Lifshitz-Gilbert equation.* Accepted by J. Comp. Phys. Doi: 10.1016/j.jcp.2019.109046.

Conference Talks

Second-order semi-implicit projection methods for Landau-Lifshitz equation, 7^{th} Representative Congress, Society for Industrial and Applied Mathematics of Jiangsu Province. (December 2018)

Second-order semi-implicit projection methods for Landau-Lifshitz equation, China Society for Industrial and Applied Mathematics (CSIAM) 2019. (September 2019)

Honors and Awards

2012–2016	National Encouragement Scholarship
	National Scholarship
	Outstanding Student First Prize Scholarship
	Outstanding Graduates Awards
2016–2017	Outstanding Student First Prize Scholarship
2017–2018	Outstanding Student Second Prize Scholarship
2018–2019	Outstanding Student Highest Prize Scholarship
	Second Prize, Chinese Mathematical Competitions (Anhui division)
	Third Prize, National Post-Graduate Mathematical Contest in Modeling
Research	2018 JSIAM Graduate International Symposium (outstanding winner)

Graduate Coursework

- ❑ Real Variables
- ❑ Functional Analysis
- ❑ Numerical Analysis
- ❑ Advanced Mathematical Statistics
- ❑ Numerical Solution of Partial Differential Equations
- ❑ An introduction to Homogenization
- ❑ Partial Differential Equations
- ❑ Stochastic Differential Equations in Economy
- ❑ Landau-Lifshitz equation
- ❑ Topology
- ❑ Quantum Mechanics
- ❑ Machine Learning

Relevant Skills

Languages: English (CET6)
Programming: Linux, C, C++, Fortran, Matlab, Python