JINGMIN XIA

College of Meteorology and Oceanography, National University of Defense Technology, China
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EDUCATION

College of Meteorology and Oceanography, National University of Defense Technology
Lecturer *10/2021 –*

Mathematical Institute, University of Oxford *10/2017 - 07/2021*
D.Phil. in EPSRC Centre for Doctoral Training in Partial Differential Equations
Thesis: Computational and Analytical Aspects of Energy Minimisation Problems in Cholesteric, Ferronematic and Smectic Liquid Crystals
Supervisor: Prof. Patrick E. Farrell

School of Mathematics, University of Warwick *10/2015 - 06/2016*
Visiting undergraduate student. Grade: 72.63% (first class)
Supervisor: Prof. Colin Sparrow

College of Science, National University of Defense Technology *09/2012 - 07/2016*
Bachelor of Science, Applied Mathematics. Grade: 88.7/100 (top student)
Thesis: CPR Method and its Applications in Traffic Flow
Supervisor: Prof. Songhe Song

PUBLICATIONS

J. Xia and P. E. Farrell. *Variational and numerical analysis of a Q-tensor model for smectic-A liquid crystals*, to appear, 2021.

J. Dalby, P. E. Farrell, A. Majumdar and **J. Xia**. *One-dimensional ferronematics in a channel: order reconstruction, bifurcations and multistability*, submitted, arxiv:abs/2102.06347, 2021.

J. Xia, S. MacLachlan, P. E. Farrell and T. J. Atherton. *Structural landscapes in geometrically frustrated smectics*, submitted, arxiv:abs/2102.00129, 2021.

J. Xia, P. E. Farrell and F. Wechsung. *Augmented Lagrangian preconditioners for Oseen–Frank models in nematic and cholesteric liquid crystals*, BIT Numerical Mathematics, doi:10.1007/s10543-020-00838-9, 2021, pp.1-38.

J. Xia, P. E. Farrell and S. G. P. Castro. *Nonlinear bifurcation analysis of stiffener profiles via deflation techniques*, Thin-Walled Structures, 149 (2020), pp. 1-11, 10.1016/j.tws.2020.106662.

M. Song, X. Qian, H. Zhang, **J. Xia** and S. Song, *Two kinds of new energy-preserving schemes for the coupled nonlinear Schrödinger equations*, Communications in Computational Physics, 25 (4) (2019), pp. 1127–1143, 10.4208/cicp.OA-2017-0212.

J. Xia, Z. Xu and D. Hu. *Flocking in a two-agent system with processing delay*, Mathematics in Practice and Theory (Chinese), 18 (2016), pp. 264–270.

J. Xia, J. Sun, T. Fang, X. Zhang and J. Fang. *Linear optical properties of gold colloid*, Materials Science, 21 (2015). 10.5755/j01.ms.21.4.9558.

RESEARCH EXPERIENCE

Implementation and Bifurcation Analysis of Saint Venant–Kirchhoff Hyperelastic Models for Aircraft Stiffeners *06/2018 - 09/2018*
PDE CDT Mini-Project 2
Supervisor: Prof. Patrick Farrell

Construction, Implementation and Analysis of Variational Integration Schemes for the Wave Equation *01/2018 - 04/2018*
PDE CDT Mini-Project 1
Supervisor: Prof. Sina Ober-Blöbaum

Flocking in a Two-Agent System with Processing Delay *2015*
National Innovation Projects for Undergraduate Students
Supervisor: Prof. Xiao Wang

Linear Optical Properties of Gold Colloid *2014*
Student Research Assistant
Supervisor: Prof. Jingyue Fang

AWARDS AND COMPETITIONS

The Keble Association Grant 2019-20 *12/2019*
Awarded: Study Awards

National Mathematical Contest in Modeling for Graduates, China *12/2016*
Awarded: Second Prize

Mathematical Contest in Modeling (MCM/ICM), USA *02/2014*
Awarded: Honorable Mention

Mathematical Contest in Modeling for Undergraduates in Hunan Province, China *2014*
Awarded: Third Prize

TEACHING

MT 2019: Numerical Solution of Differential Equations I

MT 2019: Marking the Math Admission Test 2019

HT 2020: Numerical Solution of Differential Equations II

HT 2020: Tutoring the collection (Numerical Solution of Differential Equations) in Lincoln College

COMPUTER SKILLS

Modeling & Analysis	Python, Firedrake, Mathematica, Matlab
Software & Tools	LaTeX, ParaView, Git