

Fangying Song's Curriculum Vitae
updated 2019.6.27

Nationality: Chinese Marital status: Married
Address: College of Mathematics and Computer Sciences, Fuzhou University
Phone: +86 19959346509 Email: fangying_song@brown.edu

**WORK
CAREER**

02/2018-07/2019 Division Of Applied Mathematics, Brown University (Senior Research Associate)
07/2018- College of Mathematics and Computer Sciences, Fuzhou University (Assistant Professor to Professor)
07/2014-06/2018 Division Of Applied Mathematics, Brown University (Post-doctoral Research Associate), Advisor: George Em Karniadakis

EDUCATION

09/2011-06/2014 School of Mathematical Sciences, Xiamen University (Ph.D. in Computational Mathematics), Advisor: Chuanju Xu
09/2008-07/2011 School of Mathematical Sciences, Xiamen University (M.S. in Computational Mathematics), Advisor: Chuanju Xu
09/2004-07/2008 School of Mathematical Sciences, Xiamen University (B.S. in Information and Computing Science), Major: Rank 2/39

**RESEARCH
INTERESTS**

Numerical approximations for PDEs:
Numerical Methods for PDEs, Spectral (Element) Method, Finite Different Method;
Computational modeling:
Phase-Field model, Allen-Cahn Equations, Navier-Stokes equations.

**RESEARCH
EXPERIENCE**

- *Thesis:*
Spectral (Element) Methods for Fractional Diffusion Equations and Applications. Xiamen University, 2014.
- *Scientific Research:*
Xiamen University Graduate Student Innovation Fund, 80,000RMB, 2011.6-2014.5
- *Publications:*
 1. **Fangying Song**, George Em Karniadakis, Fractional Magneto-Hydrodynamics: Algorithms and Applications. J. Comput. Phys. 378:44-62, 2019.
 2. **Fangying Song**, Chuanju Xu, George Em Karniadakis, Computing fractional Laplacians on complex-geometry domains: Algorithms and simulations. SIAM J. Sci. Computing, 39(4), A1320-1344, 2017.
 3. **Fangying Song**, George Em Karniadakis, Fractional Spectral Vanishing Viscosity method: Application to the Quasi-Geostrophic Equation. Chaos, Solitons & Fractals, 102, 327-332, 2017.

4. **Fangying Song**, Fanhai Zeng, Wei Cai, Wen Chen, George Em Karniadakis, Efficient two-dimensional simulations of the fractional Szabo equation with different time-stepping schemes. *Computers & Mathematics with Applications*, 73(6),1286-1297, 2017
5. **Fangying Song**, Chuanju Xu, George Em Karniadakis, A Fractional Phase-Field Model for Two-Phase Flows with Tunable Sharpness: Algorithms and Simulations. *Computer Methods in Applied Mechanics and Engineering* 305:376-404, 2016.
6. **Fangying Song**, Chuanju Xu, Spectral Direction Splitting Methods for the Two-dimensional Space Fractional Diffusion Equation. *J. Comput. Phys.* 299:196-214, 2015.

- *Conferences:*

1. 2017 SIAM Annual Meeting (AN17), David Lawrence Convention Center Pittsburgh, Pennsylvania, July 10-14, 2017.
2. 2017 SIAM Conference on Computational Science and Engineering (CSE17), Hilton Atlanta, Atlanta, Georgia, USA, Feb 27-Mar 3, 2017.
3. 2016 SIAM Annual Meeting (AN16), The Westin Boston Waterfront, Boston, Massachusetts, July 11-15, 2016.
4. The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, Florida, USA, July 1-5, 2016.
5. 2013 National Annual Meeting on College Computational Mathematics, Changsha, China, October 19-23, 2013.
6. Sixteenth Conference on CFD and Aerodynamics, Guangzhou University, China, November 28-30, 2013.