

Yunfeng Xiong

CONTACT INFORMATION	School of Mathematical Sciences Peking University No. 5, the Summer Palace Road Beijing, 100871 China	mobile: +86-155-0120-0199 skype: xiongyf_math@hotmail.com e-mail: xiongyf@math.pku.edu.cn homepage: xiongyf-kuma.github.io
RESEARCH INTERESTS	<ul style="list-style-type: none">• Stochastic methods for many-body quantum dynamics• Spectral method, semi-Lagrangian method for kinetic equations• Probability theory and harmonic analysis• Mathematical Finance• Parallel and distributed computing	
RESEARCH EXPERIENCE	Peking University , Beijing, China <i>Boya Postdoctoral</i>	2020-
	<ul style="list-style-type: none">• Instructor: Professor Yuan Zhang	
EDUCATION	Peking University , Beijing, China <i>Doctor of Science</i> , Computational Mathematics	2016-2020
	<ul style="list-style-type: none">• Thesis: Many-body Wigner Dynamics: Branching Random Walk and Particle Annihilation• Instructor: Professor Sihong Shao	
	Peking University , Beijing, China <i>Visiting student</i> , Computational Mathematics	2015-2016
	<ul style="list-style-type: none">• Instructor: Professor Sihong Shao	
	Zhejiang University , Hangzhou, Zhejiang, China <i>Master of Science</i> , Computational Mathematics	2012-2015
	<ul style="list-style-type: none">• Thesis: A comparison study of the classical and quantum Liouville-Poisson systems by Fourier transform method• Instructor: Professor Qingbiao Wu	
	Xi'an Jiaotong University , Xi'an, Shannxi, China <i>Bachelor of Science</i> , Mathematics and Applied Mathematics	2008-2012
	Xi'an Jiaotong University , Xi'an, Shannxi, China <i>Bachelor of Economics</i> , Finance (Minor)	2008-2012
HONOURS AND AWARDS	Elite PhD candidates of Computational and Applied Mathematics, Peking University	2016-2020
	National Scholarship, Peking University	2019
	President Scholarship, Peking University	2017, 2018
	Honor student, Xi'an Jiaotong University	2011
	Siyuan Scholarship, Xi'an Jiaotong University	2009, 2010, 2011

- PAPERS AND
PREPRINTS
- Y. Xiong and S. Shao, Overcoming the numerical sign problem in Wigner dynamics via particle annihilation, Submitted for publication, 2020, available at <http://arxiv.org/abs/2008.05161>.
- S. Shao and Y. Xiong, SPADE: Sequential-clustering Particle Annihilation via Discrepancy Estimation, Submitted for publication, 2020, available at <http://arxiv.org/abs/2005.05129>.
- S. Shao and Y. Xiong, Branching random walk solutions to the Wigner equation, SIAM J. Numer. Anal., 2020, 58(5): 2589-2608.
- Z. Chen, Y. Xiong and S. Shao, Numerical methods for the Wigner equation with unbounded potential, J. Sci. Comput., 2019, 79(1): 345-368.
- Y. Xiong and S. Shao, The Wigner Branching Random Walk: Efficient implementation and performance evaluation, Commun. Comput. Phys., 2019, 25(3), 871-910.
- S. Shao and Y. Xiong, A branching random walk method for many-body Wigner quantum dynamics, Numer. Math. Theor. Meth. Appl., 2019, 12(1), 21-71.
- Y. Xiong, Z. Chen and S. Shao, An advective-spectral-mixed method for time-dependent many-body Wigner simulations, SIAM J. Sci. Comput., 2016, 38(4), B491-B520.
- PROGRAMMING
SKILLS
- Adept at Fortran and C programming and parallel computing via the Message Passing Interface (MPI) standard.