

Wei-Xi Li

Curriculum Vitae

School of Mathematics and Statistics
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Education

2003 BA degree in Mathematics, Wuhan University

2008 PhD, Wuhan University, Thesis adviser: Prof. Hua Chen

Positions

Professor.	Wuhan University, November 2014-Present
Associate Professor.	Wuhan University, November 2012 - October 2014
Lecturer.	Wuhan University, July 2008 - October 2012
Postdoctor.	University of Bologna, February 2012 - January 2013 Mentor: Alberto Parmeggiani
Postdoctor.	Nantes University, January - December, 2011 Mentor: Frédéric Héreau and Xue Ping Wang
Postdoctor.	Lund University, January - December, 2010 Mentor: Nils Dencker
Postdoctor.	Université Paris VI, February -December, 2009 Mentor: Nicolas Lerner

Research Interests

Partial Differential Equations and mathematical physics

- Spectral analysis (Compact resolvent, Fokker-Planck operator, Witten Laplacian, . . .)

updated on March 9, 2018.

- Boundary layer analysis for fluid mechanics equations (Prandtl equation, inviscid limit of Navier-Stokes equation, . . .)
- Regularity of degenerate elliptic equations (Boltzmann equation, Monge-Ampère equations, twisted Laplacians, . . .)

Research Grants

- Fok Ying Tung Education Foundation (No. 151001), 03/2016 - 03/2019
- NSFC for Excellent Young Scholars (No. 11422106), 01/2015 - 12/2017
- NSFC for Young Scholars (No. 11001207), 01/2011 - 12/2013
- NSFC (Tianyuan Mathematics) (No. 10926119), 01/2010 - 12/2010
- Scientific Research Foundation for the ROCS, 01/2014 - 12/2015

Student Supervision

- Lv-Qiao Liu, MS 06/2017, PhD student since 09/2017
- Hao Wang, PhD student since 09/2017
- Juan Zeng, MS student since 09/2017
- Mengting Yan, MS student since 09/2017
- Shan Wang, MS student since 09/2017
- Jin Tan, MS, is taking the Bézout Master's program since 09/2017
- Yan-Lin Wang, MS 06/2017, PhD student at City Univ. of Hong Kong since 08/2017
- Jin-Nan Guo, MS 06/2017
- Wei-Man Xu, MS 06/2017

Publication

26. Wei-Xi Li, Spectral Analysis for Fokker-Planck operator and Witten Laplacian(in Chinese), in Honor of the 90th birthday of Professor Minyou Qi. Preprint
25. Hua Chen, Xin Hu, Wei-Xi Li and Jinpeng Zhan, The resolvent of the linearized Boltzmann operator with a confining potential. Preprint
24. Wei-Xi Li and Tong Yang, Well-posedness in Gevrey function space for the three-dimensional Prandtl equations. preprint

23. Wei-Xi Li, Alberto Parmeggiani and Yan-Lin Wang, Global Gevrey hypoellipticity for twisted Laplacian on forms. Accepted by **Journal of Pseudo-Differential Operators and Applications**.
22. Wei-Xi Li, Compactness of the resolvent for the Witten Laplacians. Accepted by **Annales Henri Poincaré**.
21. Wei-Xi Li, Van-Sang Ngo and Chao-Jiang Xu, Boundary layer analysis for the fast horizontal rotating fluids. preprint
20. Wei-Xi Li and Tong Yang, Well-posedness in Gevrey function space for the Prandtl equations with non-degenerate critical points. Accepted by **Journal of the European Mathematical Society (JEMS)**
19. Feng Cheng, Wei-Xi Li and Chao-Jiang Xu, Vanishing viscosity of Navier-Stokes flow to ideal flow in Gevrey space. **Mathematical Methods in the Applied Sciences** 40 (2017), 5161-5176
18. Feng Cheng, Wei-Xi Li and Chao-Jiang Xu, Gevrey regularity with weight for incompressible Euler equation in the half space. **Acta Mathematica Scientia** 37 (2017), no. 4, 1115-1132
17. Wei-Xi Li, Compactness criteria for the resolvent of Fokker-Planck operator. Accepted by **Ann. Sc. Norm. Super. Pisa Cl. Sci.**
16. Wei-Xi Li, Di Wu and Chao-Jiang Xu, Gevrey Class Smoothing Effect for the Prandtl Equation. **SIAM J. Math. Anal.** 48 (2016), 1672–1726
15. Wei-Xi Li, Peng Luo and Shuying Tian, L^2 -regularity of kinetic equations with external potential. **Journal of Differential Equations**, 260 (2016) 5894-5911
14. Radjesvarane Alexandre, Frédéric Hérau and Wei-Xi Li, Global hypoelliptic and symbolic estimates for the linearized Boltzmann operator without angular cutoff. Preprint
13. Wei-Xi Li, Global hypoelliptic estimates for fractional order kinetic equation. **Mathematische Nachrichten** 287(2014), 610–637
12. Hua Chen, Wei-Xi Li and Ling-Jun Wang, Regularity of traveling free surface water waves with vorticity. **Journal of Nonlinear Sciences** 23(2013), 1111-1142
11. Wei-Xi Li and Alberto Parmeggiani, Global Gevrey-hypoellipticity for twisted Laplacians. **Journal of Pseudo-Differential Operators and Applications** 4(2013), 279-296

10. Frédéric Hérau and Wei-Xi Li, Global hypoelliptic estimates for Landau-type operator with external potential. **Kyoto Journal of Mathematics** 53 (2013), 533-565
9. Renjun Duan and Wei-Xi Li, Hypocoercivity for the linear Boltzmann equation with confining forces. **Journal of Statistical Physics** 148(2012), 306–324
8. Wei-Xi Li, Global hypoellipticity and compactness of resolvent for Fokker-Planck operator, **Ann. Sc. Norm. Super. Pisa Cl. Sci. . (5) Vol. XI(2012)**, 789-815
7. Hua Chen, Wei-Xi Li and Chao-Jiang Xu, Gevrey regularity of subelliptic Monge-Ampère equations in the plane, **Advances in Mathematics** 228(2011) 1816-1841
6. Hua Chen, Wei-Xi Li and Chao-Jiang Xu, Gevrey hypoellipticity for a class of kinetic equations, **Comm. Partial Differential Equations** 36 (2011) 693-728.
5. Hua Chen, Wei-Xi Li and Chao-Jiang Xu, Analytic smoothness effect of solutions for spatially homogeneous Landau equation, **Journal of Differential Equations** 248 (2010) 77-94.
4. Hua Chen, Wei-Xi Li and Chao-Jiang Xu, Gevrey hypoellipticity for linear and non-linear Fokker-Planck equations, **Journal of Differential Equations** 246 (2009), 320- 339
3. Hua Chen, Wei-Xi Li and Chao-Jiang Xu, Gevrey regularity for solution of the spatially homogeneous Landau equation, **Acta Mathematica Scientia** 29(2009), 673-686
2. Hua Chen, Wei-Xi Li and Chao-Jiang Xu, Propagation of Gevrey regularity for solutions of Landau equations, **Kinetic and Related Models** 1(2008), 355- 368.
1. Shaohua Wu, Hua Chen and Wei-Xi Li, The local and global existence of the solutions of hyperbolicparabolic system modeling biological phenomena, **Acta Mathematica Scientia** 28 (2008), 101- 116.