

# Pingwen Zhang

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**President of Wuhan University, Deputy Party Committee Secretary, Peking University Boya Chair Professor**

**Peking University, Beijing 100871, China**

**Phone:** 86-10-6275-9851      **Fax:** 86-10-6275-1801

**E-mail:** [pzhang@pku.edu.cn](mailto:pzhang@pku.edu.cn)      **Homepage:** <https://www.math.pku.edu.cn/pzhang/en>

## Education

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1988 - 1992      **Ph.D.** Department of Mathematics, Peking University, Beijing, China  
supervised by Prof. Longan Ying

1984 - 1988      **B.S.** Department of Mathematics, Peking University, Beijing, China

## Working Experience

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2022 -              President of Wuhan University, Deputy Party Committee Secretary

2020 - 2022        President of Institute of Scientific and Technological Innovation, Peking University

2019 - 2022        Vice President, Peking University, China

2018 -              Director of National Engineering Laboratory for Big Data Analysis and Application  
Technology, Peking University, China

2019 - 2021        Director of Center for Data Science of Peking University, China

2018 - 2019        Director of Center for Computational Science and Engineering, China

2015 - 2019        Director of Office of Academic Development, Peking University, China

2013 - 2015        Executive Vice Dean of School of Mathematical Sciences, Peking University, China

2010 - 2017        Director of Laboratory of Mathematics and Applications, Peking University, China

2008 - 2012        Vice Dean of School of Mathematical Sciences, Peking University, China

2008 - 2012        Deputy Director of Institute of Mathematics, Peking University, China

2008 - 2010        Deputy Director of Laboratory of Mathematics and Applications, Peking University, China

2001 - 2018        Executive Deputy Director for Center for Computational Science and Engineering,  
Peking University, China

1999 - 2008        Director for Department of Scientific& Engineering Computing, School of Mathematical

Sciences, Peking University, China

- 1996 - Professor in School of Mathematical Sciences, Peking University, China
- 1994 - 1996 Associate Professor in School of Mathematical Sciences, Peking University, China
- 1992 - 1994 Lecturer in Department of Mathematics, Peking University, China

## Research Interests

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- Modeling and Simulation of Soft Matter (Complex Fluids)
- Applied Analysis and Numerical Analysis
- Big Data Analysis and Applications

## Honors and Awards

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- 2021 Science and Technology Progress Award by Ho Leung Ho Lee Foundation
- 2020 Fellow of Society for Industrial and Applied Mathematics
- 2018 Invited Speaker, International Congress of Mathematicians
- 2016 Fellow of The World Academy of Sciences for the advancement of science in developing countries
- 2015 Academician of Chinese Academy of Sciences
- 2015 Chair of Sub-Committee of Academic, 8th International Congress on Industrial and Applied Mathematics
- 2014 National Prize of Natural Sciences (Second-prize)
- 2014 Academic leader of Science Fund for creative research groups of the National Natural Science Foundation of China
- 2014 Invited Speaker, Society for Industrial and Applied Mathematics
- 2011 Invited Speaker, 7th International Congress on Industrial & Applied Mathematics
- 2010 Model of Teachers' Morality, Beijing
- 2007 The First-Class Prize of Natural Sciences, Higher Education Institutions of MOE
- 2002 National Science Foundation for Distinguished Young Scholars
- 2002 Changjiang distinguished professor
- 1999 Feng Kang Prize of Scientific Computing

## Professional Activities

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- 2022 - Peking University Boya Chair Professor
- 2022 - Chief scientist of the Institute of Computing and Digital Economy, Peking University
- 2022 - President of Chinese Society of Educational Development Strategy Educational Assistance Special Committee
- 2021 - Chief scientist of Chongqing Research Institute of Big Data, Peking University
- 2018 - Director of the National Engineering Laboratory of Big Data Analysis and Applied Technology, Peking University
- 2016 - President of China Society for Industry and Applied Mathematics (CSIAM)
- 2004 - 2016 Vice President, Director for Scientific Committee of China Society for Industry and Applied Mathematics (CSIAM)
- 2015 - Associate Director for Scientific Committee of National Lab in Large Scale Scientific Computing
- 2006 - Associate Director for Scientific Committee of Computational Physics Lab, Institute of Applied Physics and Computational Mathematics
- 2001 - 2006 Associate Director for Scientific Committee of National Lab in Large Scale Scientific Computing
- 2010 - 2014 Vice President of Chinese Computational Mathematics Society
- 2002 - 2006 Vice President of Chinese Computational Mathematics Society
- 2005 - Visiting Professor, research collaborator, Jilin University
- 2004 - Visiting Professor, research collaborator, Xiangtan University
- 2004 - Visiting Professor, research advisor, Suzhou University
- 1999 - 2001 Visiting Professor, research advisor, Tsinghua University

## Editorial Board

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- 2020 - CSIAM Transactions on Applied Mathematics (Editor in Chief)
- 2014 - Multiscale Modeling & Simulation, A SIAM Interdisciplinary Journal
- 2013 - Science China Mathematics
- 2012 - Discrete and Continuous Dynamical System-B
- 2011 - Journal of Mathematics in Industry (Coordinating Editors)

2010 - Applied Mathematics and Mechanics;(Associate Chief Editor Since 2014)

2007 - Journal of Computational Mathematics

2006 - Communications in Computational Physics

2006 - International Journal of Nonlinear Science

2005 - Communication in Mathematical Sciences

2005 - Journal of Information and Computational Science

2005 - 2013 SIAM Journal on Numerical Analysis

2002 - Applied Mathematical Research Express (AMRX)

2010 - Advances in Mathematics

2007 - Journal of Engineering Mathematics (China)

2006 - Journal of Mathematics (China)

2004 - Journal of Computational Mathematics (China)

2004 - Journal of Computational Physics (China)

2004 - Northeast Mathematical Journal (China)

## Invited Talks

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- 2022 Global Digital Economy Conference Data Elements Summit, Beijing, 2022.7.29.
- AI for Science Series Academic Lectures, Beijing, 2022.5.25.
- 2018 International Congress of Mathematicians (ICM2018), Rio De Janeiro, 2018.
- The 9th International Conference on Computational Physics, Singapore, 2015.1.7-11.
- International Conference on Optimization, Sparsity and Adaptive Data Analysis, Beijing, 2015.3.18-21.
- The 2014 SIAM Annual Meeting (AN14), Chicago, Illinois, USA, 2014.7.7-11.
- Robust Discretization and Faster Solvers for Computable Multi-Physics Models, ICERM, Brown University, 2014.5.12-16.
- The 5th International Conference on Scientific Computing and PDEs, Hong Kong, 2014.12.8-12.
- International Conference on PDE, Guangzhou, 2013.12.6-10.
- 2013 Northeastern Asian Symposium on Methods and Modeling for High Performance Scientific Computing, Chengdu, 2013.9.22-25.
- 2013 International Conference on Mathematical Modeling and Computation, Wuhan, 2013.5.15-19.
- Nonlinear analysis of continuum theories: statics and dynamics, Oxford, 2013.4.8-12.
- Symmetry, bifurcation and order parameters, Cambridge, 2013.1.7-11.
- Multiscale Modeling, Simulation, Analysis and applications, Singapore, 2012.1.9-13.
- International Conference on Scientific Computing, Hong Kong, 2012.1.4-7.

- 7<sup>th</sup> International Congress on Industrial and Applied Mathematics, Vancouver, 2011.7.18-22.
- International Conference on Interdisciplinary Applied Mathematics and Computational Mathematics, Zhejiang, 2011.6.17-21.
- Sino-French Workshop on Contemporary Applied Mathematics, Shanghai, 2011.7.4-8.
- International Conference on Applied Mathematics and Interdisciplinary Research, Tianjin, 2011.6.13-16.
- Kinetic and Fluids, Beijing, 2010.07.
- The 5th China-Italy Conference on Computational and Applied Mathematics. Mathematical models in Life Science: Theory and Simulation, Roma, Italy, 2009.09.
- The 3rd Chinese-German Workshop on Computational and Applied Mathematics, Heidelberg, Germany, 2009.9.28 – 10.2.
- International Workshop on Continuum Modeling of Biomolecules, Beijing, 2009.09
- Mathematical Theory and Numerical Methods of Computational Materials simulation and Design, Singapore, 2009.08.
- International Conference on Mathematical Theory and Applications of Liquid Crystal, Ferromagnetism and Related Topics, Guangzhou, 2009.06.
- Computational Multiscale Methods, Oberwolfach, Germany, 2009.06.
- International Workshop on Quantum Systems and Semiconductor Devices: Analysis, Simulations, Applications, Beijing, 2009.04.
- Adaptivity, Robustness and Complexity of Multiscale Algorithm, Edinburgh, England, 2009.03.
- Rheology of complex fluids: Modeling and Numerics, Paris, France, 2009.01.
- The 6th International Conference on Scientific Computing and Applications, Busan, Korea, 2008.06.
- Workshop on the Foundations of numerical PDEs (FoCM), Hong Kong, 2008.06.
- Workshop on Nanoscale Interfacial Phenomena in Complex Fluids, Beijing, 2008.06.
- Canada-China workshop on industrial mathematics, Banff, Canada, 2007.08.
- Multiscale Modeling of Complex Fluids, Maryland, 2007.04.
- International Workshop on Multiscale Analysis and Applications, Singapore, 2006.11.
- The Symposium on Multi-physics and Multi-Scale Computation of Materials-2006, Xian, 2006.11.
- International Conference on PDE and Numerical Analysis, Changsha, 2006.06.
- Workshop on Multiscale Modeling of Complex Fluids, Beijing, Jun. 2006.06.
- International Conference on Recent Advances in Scientific Computations, Beijing, 2006.06.
- International Conferences on Applied Mathematics and Interdisciplinary Research, Tianjin, 2006.06.
- International Symposium on Polymer Physics, Suzhou, 2006.06.
- Interfacial Dynamics in Complex Fluids, Banff, Canada, 2006.05.
- International Conference on Calculus of Variations, PDEs and Nonlinear Analysis, Beijing, 2006.05.
- The second International Conference on Scientific Computing and Partial Differential Equations, Hong Kong, 2005.11.

- The 1st China-Germany Workshop on Computational and Applied Mathematics, Berlin, Germany, 2005.09.
- International conference on scientific computing, Nanjing, 2005.06.
- International conference on multiscale modeling and scientific computing, Peking University, 2005.06.
- Mathematical models in life sciences: Theory and Simulation, Beijing, 2005.06.
- The 3rd joint Chinese-Korean Workshop on Recent Progresses on Numerical Analysis and Its Applications, South Korea, 2005.02.
- Nanoscale Material Interfaces: Experiment, Theory and Simulation, Singapore, 2005.01.
- Workshop on Multiscale Rheological Models for Fluids, Montreal, Canada, 2004.11.
- International Conference on Numerical and Applied PDEs, Changchun, 2004.06.
- International Conference on Frontiers of Applied Mathematics, Beijing, 2004.06.
- The 2nd International Conference on Inverse Problem, Shanghai, 2004.06.
- International Workshop on Wave Propagations, Beijing, 2004.06.
- International Conference on Superconvergence and A Posteriori Estimates in FEM, Changsha, 2004.05.
- International Conference of Scientific Computing, Beijing, 2003.12.
- The 3rd China-Italy Joint Conference on Computational and Applied Mathematics, Grado, Italy, 2003.11.
- The 2nd Chinese-Korean Joint Workshop on Recent Advances in Numerical Analysis and Its applications, Beijing, 2003.02.
- The Third International Workshop on Scientific Computing and Applications, Hong Kong, 2003.01.
- ICM2002-Beijing Satellite Conference on Scientific Computing, Xi'an, 2002.08.
- The 11th International Conference of Fluid Dynamics and Soft Condensed Matter, Shanghai, 2002.08.
- Workshop on Multiscale Analysis and Computation, Taiwan, 2002.06.
- The 3rd China-Sweden Workshop on Computational Mathematics Goteberg, Sweden, 2002.06.
- International symposium on computational & applied PDEs, Zhangjiajie, 2001.06.
- International conference on scientific & engineering computing, Peking University, 2001.03.
- The First Chinese-Korean Joint Workshop on Recent advances in Numerical Analysis and Its Applications, Korea, 2001.02.
- The 2nd Sino-Italian Symposium on Computational and Applied Mathematics, Ischia, Italy, 2000.06.
- The 2nd China-Sweden workshop on Numerical Partial Differential Equations, Hong Kong, 2000.01.
- Conference of Partial Differential Equation and Numerical Method in Mechanics, Hong Kong, 1999.06.
- The First Sino-Italian Symposium on Applied and Computational Mathematics, Beijing, 1998.12.
- China-Japan Symposium on Computational Mathematics, Dalian, 1997.08.
- 96'Symposium on Computational Physics, Institute of Computational Mathematics and Applied Physics, Beijing, 1996.06.
- Summer Research Seminars on Theory and Computations of Fluid Dynamics, Beijing, 1994.06.

## Books

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1. Pingwen Zhang and Zeqi Qiu, Five discussions on data elements: information, ownership, value, security and transaction(Chinese), Peking University Press, (2022)
2. Pingwen Zhang and Tiejun Li, Numerical Analysis (Chinese), Peking University Press, (2007)
3. Tatsien Li and Pingwen Zhang (editors), Frontiers and Prospects of Contemporary Applied Mathematics, Series in Contemporary Applied Mathematics, CAM6, Higher Education Press and World Scientific, (2006)
4. Tie Zhou, Shufang Xu, Pingwen Zhang and Tiejun Li, Computational Methods, Tsinghua University Press, (2006)
5. Shufang Xu, Li Gao and Pingwen Zhang, Numerical Linear Algebra (Chinese), Peking University Press, (2001)
6. Long-an Ying and Pingwen Zhang, Vortex Methods, Science Press, (1994)

## Publications

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1. Lei Zhang, Pingwen Zhang, Xiangcheng Zheng. A model-free shrinking-dimer saddle dynamics for finding saddle point and solution landscape[J]. Japan Journal of Industrial and Applied Mathematics, 2023: 1-17.
2. Lei Zhang, Pingwen Zhang and Xiangcheng Zheng. Discretization and index-robust error analysis for constrained high-index saddle dynamics on the high-dimensional sphere[J]. Science China Mathematics, 2023: 1-14.
3. Lei Zhang, Pingwen Zhang and Xiangcheng Zheng. Mathematical and numerical analysis to shrinking-dimer saddle dynamics with local Lipschitz conditions. CSIAM Transaction on Applied Mathematics, 2023, x:157-176.
4. Wenjia Kong, Haochen Li, Chen Yu, Jiangjiang Xia, Yanyan Kang, Pingwen Zhang. A deep spatio-temporal forecasting model for multi-site weather prediction post-processing[J]. Communications in Computational Physics, 2022, 31(1): 131-153.
5. Chuansai Zhou, Haochen Li, Chen Yu, Jiangjiang Xia, Pingwen Zhang. A station-data-based model residual machine learning method for fine-grained meteorological grid prediction[J]. Applied Mathematics and Mechanics, 2022, 43(2): 155-166.
6. Jie Song, Guannan He, Jianxiao Wang, Pingwen Zhang. Shaping future low-carbon energy and transportation systems: Digital technologies and applications[J]. iEnergy, 2022, 1(3): 285-305.
7. Lei Zhang, Pingwen Zhang and Xiangcheng Zheng. Error estimates for euler discretization of high-index saddle dynamics. SIAM Journal on Numerical Analysis, 2022, 60(5):2925-2944.
8. Bing Yu, Xiangcheng Zheng, Pingwen Zhang and Lei Zhang. Computing solution landscape of nonlinear space-fractional problems via fast approximation algorithm. Journal of Computational Physics, 2022, 468:111513.
9. Jianyuan Yin, Lei Zhang and Pingwen Zhang. Solution Landscape of the Onsager Model Identifies Non-axisymmetric Critical Points. Physica D: Nonlinear Phenomena, 2022, 430:133081.

10. 乔天宇,李由君,赵越等.数字治理格局研判的理论与方法探索[J].中国科学院院刊,2022,37(10):1365-1375.DOI:10.16418/j.issn.1000-3045.20220729001.
11. 张平文.数字经济将成为国家发展新征程的助推器[J].中国经贸导刊,2022(03):12-14.
12. 王娟,张蕴洁,宋洁等.中美欧数字经济与贸易的比较研究[J].西安交通大学学报(社会科学版),2022,42(03):31-40.DOI:10.15896/j.xjtuskb.202203004.
13. 王娟,张一,黄晶等.中国数字生态指数的测算与分析[J].电子政务,2022(03):4-16.DOI:10.16582/j.cnki.dzzw.2022.03.001.
14. Jucen Han,Jianyuan Yin,Pingwen Zhang,Apala Majumdar and Lei Zhang. Solution landscape of a reduced Landau-de Gennes model on a hexagon. *Nonlinearity*, 2021, 34(4):2048-2069.
15. Wei Wang,Lei Zhang and Pingwen Zhang. Modeling and Computation of Liquid Crystals. *Acta Numerica*, 2021, 30:765-851.
16. Jianyuan Yin,Kai Jiang,AnChang Shi,Pingwen Zhang and Lei Zhang. Transition pathways connecting crystals and quasicrystals. *Proceedings of the National Academy of Sciences*, 2021, 118(49):e2106230118.
17. 张平文.数学与企业创新[J].中国科学院院刊,2021,36(04):484-489.DOI:10.16418/j.issn.1000-3045.20210123003.
18. 张平文,贺飞,何洁等.把脉问诊、对标一流:北京大学学科国际同行评议的探索与启示[J].大学与学科,2021,2(03):108-117.
19. Qiuqi Li and Pingwen Zhang. A Variable-Separation Method for Nonlinear Partial Differential Equations With Random Inputs. *SIAM Journal on Scientific Computing*, 2020, 42(2):A723-A750.
20. Jiangjiang Xia,Haochen Li,Yanyan Kang,Chen Yu,Lei Ji,Lve Wu,Xiao Lou,Guangxiang Zhu,Zaiwen Wang,Zhongwei Yan,Lizhi Wang,Jiang Zhu,Pingwen Zhang,Min Chen,Yingxin Zhang,Lihao Gao and Jiarui Han. Machine Learning-based Weather Support for the 2022 Winter Olympics. *Advances in Atmospheric Sciences*, 2020, 37:927-932.
21. Chuansai Zhou,Wen Yuan,Jun Wang,Haiyong Xu,Yong Jiang,Xinmin Wang,Qiuqi Han Wen and Pingwen Zhang. Detecting Suspected Epidemic Cases Using Trajectory Big Data. *CSIAM Transactions on Applied Mathematics*, 2020, 1(1):186-206.
22. Chen Yu,Haochen Li,Jiangjiang Xia,Hanqiuqi Wen and Pingwen Zhang. A Data-Driven Random Subfeature Ensemble Learning Algorithm for Weather Forecasting. *Communications in Computational Physics*, 2020, 28(4):1305-1320.
23. Weihua Deng,Xudong Wang and Pingwen Zhang. Anisotropic Nonlocal Diffusion Operators for Normal and Anomalous Dynamics. *Multiscale Modeling & Simulation*, 2020, 18(1):415-443.
24. Yi Mo,Mengjie Du,Wei Ge and Pingwen Zhang. Analysis of the energy-minimization multiscale model with multiobjective optimization. *Particuology*, 2020, 48:109-115.
25. Jianyuan Yin,Yiwei Wang,Jeff Z. Y. Chen,Pingwen Zhang and Lei Zhang. Construction of a Pathway Map on a Complicated Energy Landscape. *Phys. Rev. Lett.*, 2020, 124(9).
26. 张平文.关于《大学与学科》的若干思考[J].大学与学科,2020,1(01):194-200.
27. Yucen Han,Yucheng Hu,Pingwen Zhang and Lei Zhang. Transition pathways between defect patterns in confined nematic liquid crystals. *JOURNAL OF COMPUTATIONAL PHYSICS*, 2019, 396:1-11.



28. Haochen Li, Yu, Chen, Jiangjiang Xia, Yingchun Wang, Jiang Zhu and Pingwen Zhang. A Model Output Machine Learning Method for Grid Temperature Forecasts in the Beijing Area. *Advances in Atmospheric Sciences*, 2019, 36(10):1156-1170.
29. Tian Tian, Han Wang, Wei Ge and Pingwen Zhang. Detecting Particle Clusters in Particle-Fluid Systems by a Density Based Method. *COMMUNICATIONS IN COMPUTATIONAL PHYSICS*, 2019, 26(5):1617-1630.
30. Yongqiang Cai, Pingwen Zhang and An-Chang Shi. Elastic properties of liquid-crystalline bilayers self-assembled from semiflexible-flexible diblock copolymers. *SOFT MATTER*, 2019, 15(45):9215-9223.
31. Jianyuan Yin, Lei Zhang, Pingwen Zhang (2019). High-index Optimization-based Shrinking Dimer Method for Finding High-Index Saddle Points. *SIAM Journal on Scientific Computing*.
32. Mingwen Fei, Wei Wang, Pingwen Zhang and Zhifei Zhang. On the Isotropic-Nematic Phase Transition for the Liquid Crystal. *Peking Mathematical Journal*, 2018, 1:141-219.
33. Jiajie Chen, Pingwen Zhang and Zhifei Zhang. Local minimizer and De Giorgi's type conjecture for the isotropic-nematic interface problem. *calculus of Variations*, 2018, 57(5):1-19.
34. Yiwei Wang, Pingwen Zhang and Jeff Z. Y. Chen. Formation of three-dimensional colloidal crystals in a nematic liquid crystal. *SOFT MATTER*, 2018, 14(32):6756-6766.
35. Jie Shen, Jie Xu and Pingwen Zhang. Approximations on  $SO(3)$  by Wigner D-matrix and Applications. *JOURNAL OF SCIENTIFIC COMPUTING*, 2018, 74(3):1706-1724.
36. Yixiang Luo, Jie Xu and Pingwen Zhang. A Fast Algorithm for the Moments of Bingham Distribution. *JOURNAL OF SCIENTIFIC COMPUTING*, 2018, 75(3):1337-1350.
37. Jie Xu, Fangfu Ye and Pingwen Zhang. A tensor model for nematic phases of bent-core molecules based on molecular theory. *Multiscale Modeling & Simulation*, 2018, 16(4):1581-1602.
38. Jie Xu and Pingwen Zhang. Onsager-theory-based dynamic model for nematic phases of bent-core molecules and star molecules. *Journal of Non-Newtonian Fluid Mechanics*, 2018, 251:43-55.
39. Jie Xu and Pingwen Zhang. Calculating Elastic Constants of Bent-Core Molecules from Onsager-Theory-Based Tensor Model. *LIQUID CRYSTALS*, 2018, 45(1):22-31.
40. Weihua Deng, Buyang Li, Wenyi Tian and Pingwen Zhang. Boundary Problems for the Fractional and Tempered Fractional Operators. *MULTISCALE MODEL. SIMUL.*, 2018, 16(1):125-149.
41. Dong An, Wei Wang and Pingwen Zhang. On equilibrium configurations of nematic liquid crystals droplet with anisotropic elastic energy. *Research in the Mathematical Sciences*, 2017, 4(1):1-18.
42. Yiwei Wang and Pingwen Zhang. Topological Defects in an Unconfined Nematic Fluid Induced by Single and Double Spherical Colloidal Particles. *Physical Review E*, 2017, 96(4):042702.
43. Zhiyuan Geng, Wei Wang, Pingwen Zhang and Zhifei Zhang. Stability of Half-Degree Point Defect Profiles for 2D Nematic Liquid-Crystals. *Discrete and Continuous Dynamical Systems*, 2017, 37(12):6227-6242.
44. Yongqiang Cai, Pingwen Zhang and An-Chang Shi. Liquid Crystalline Bilayers Self-Assembled from Rod-Coil Diblock Copolymers. *Soft Matters*, 2017, 13(26):4607-4615.
45. Yu Tong, Yiwei Wang and Pingwen Zhang. Defects Around a Spherical Particle in Cholesteric Liquid Crystals. *Numerical Mathematics-Theory Methods and Applications*, 2017, 10(2):205-221.
46. Jinhae Park, Wei Wang, Pingwen Zhang and Zhifei Zhang. On Minimizers for the Isotropic-Nematic Interface Problem. *Calculus of Variations and Partial Differential Equations*, 2017, 56(2):41.
47. Kai Jiang, Pingwen Zhang and An-Chang Shi. Stability of Icosahedral Quasicrystals in a Simple Model with Two-Length Scales. *J. Phys. Condens. Matter*, 2017, 29(12):124003.

48. Yang Qu, Ying Wei and Pingwen Zhang. Transition of Defect Patterns from 2D to 3D in Liquid Crystals. *Communications in Computational Physics*, 2017, 21(3):890-904.
49. Jie Xu and Pingwen Zhang. The Transmission of Symmetry of Liquid Crystals. *Communications in Mathematical Sciences*, 2017, 15(1):185-195.
50. Jie Xu, Chu Wang, An-Chang Shi and Pingwen Zhang. Computing Optimal Interfacial Structure of Modulated Phases. *Communications in Computational Physics*, 2017, 21(1):1-15.
51. Kai Jiang, Jiajun Tong and Pingwen Zhang. Stability of Soft Quasicrystals in a Coupled-Mode Swift-Hohenberg Model for Three-Component Systems. *Communications in Computational Physics*, 2016, 19(3):559-581.
52. Yucheng Hu, Yang Qu and Pingwen Zhang. On the Disclination Lines of Nematic Liquid Crystals. *Communications in Computational Physics*, 2016, 19(2):354-379.
53. Shiwei Ye, Pingwen Zhang and Je Z.Y. Chen. Nematic ordering of semi-flexible polymers confined on a toroidal surface. *Soft Matter*, 2016, 12(24):5438-5449.
54. Qin Liang, Kai Jiang and Pingwen Zhang. Efficient numerical schemes for solving the self-consistent field equations of flexible-semiflexible diblock copolymers. *Mathematical Methods in Applied Sciences*, 2015, 38(18):4553-4563.
55. Pingwen Zhang and An-Chang Shi. Application of Self-consistent Field Theory to Self-Assembled Bilayer Membrane. *Chinese Physics B*, 2015, 24(12):128707.
56. Kai Jiang, Jiajun Tong, Pingwen Zhang and An-Chang Shi. Stability of Two-Dimensional Soft Quasicrystals in Systems with Two Length Scales. *Physical Review E*, 2015, 92(4):042159.
57. Sirui Li, Wei Wang and Pingwen Zhang. Local Well-posedness and Small Deborah Limit of A Molecular-Based Q-Tensor System. *Discrete and Continuous Dynamical Systems - Series B*, 2015, 20(8):2611-2655.
58. Wei Wang, Pingwen Zhang and Zhifei Zhang. The Small Deborah Number Limit of the Doi-Onsager Equation to the Ericksen-Leslie Equation. *Communications on Pure and Applied Mathematics*, 2015, 68(8):1326-1398.
59. Kai Jiang, Weiquan Xu and Pingwen Zhang. Analytic Structure of the SCFT Energy Functional of Multicomponent Block Copolymers. *Communications in Computational Physics*, 2015, 17(5):1360-1387.
60. Honghu Liu, Taylan Sengul, Shouhong Wang and Pingwen Zhang. Dynamic Transitions and Pattern Formations for a Cahn-Hilliard Model with Long-Range Repulsive Interactions. *Communications in Mathematical Sciences*, 2015, 13(5):1289-1315.
61. Wei Wang, Pingwen Zhang and Zhifei Zhang. Rigorous Derivation from Landau-De Gennes Theory to Ericksen-Leslie Theory. *SIAM Journal on Mathematical Analysis*, 2015, 47(1):127-158.
62. Jiequn Han, Yi Luo, Wei Wang, Pingwen Zhang and Zhifei Zhang. From Microscopic Theory to Macroscopic Theory: a Systematic Study on Modeling for Liquid Crystals. *Archive for Rational Mechanics and Analysis*, 2015, 215(3):741-809.
63. Qin Liang, Shiwei Ye, Pingwen Zhang and Je Z.Y. Chen. Rigid Linear Particles Confined on a Spherical Surface: Phase Diagram of Nematic Defect States. *Journal of Chemical Physics*, 2014, 141(24):244901.
64. Weiquan Xu and Pingwen Zhang. Boundary Effects in Confined Copolymer System and Compressible SCFT Model. *Journal of Computational and Applied Mathematics*, 2014, 265:290-300.

65. Haoze Tan, Qi Liao and Pingwen Zhang. Conformation of Polyelectrolytes in Poor Solvents: Variational Approach and Quantitative Comparison with Scaling Predictions. *Journal of Chemical Physics*, 2014, 140(19):194905.
66. Hao Zhang, Kai Jiang and Pingwen Zhang. Dynamic Transition for Landau-Brazovskii Model. *Discrete and Continuous Dynamical Systems - Series B*, 2014, 19(2):607-627.
67. Jie Xu and Pingwen Zhang. From Microscopic Theory to Macroscopic Theory - Symmetries and Order Parameters of Rigid Molecules. *Science China: Mathematics*, 2014, 57(3):443-468.
68. Jinglong Zhu, Pingwen Zhang, Han Wang and Luigi Delle Site. Is There a Third Order Phase Transition for Supercritical Fluids?. *Journal of Chemical Physics*, 2014, 140(1):014502.
69. Kai Jiang and Pingwen Zhang. Numerical Methods for Quasicrystals. *Journal of Computational Physics*, 2014, 256:428-440.
70. Hong Cheng and Pingwen Zhang. A Tensor Model for Liquid Crystals on a Spherical Surface. *SCIENCE CHINA Mathematics*, 2013, 56(12):2549-2559.
71. Wei Wang, Pingwen Zhang and Zhifei Zhang. Well-Posedness of the Ericksen-Leslie System. *Archive for Rational Mechanics and Analysis*, 2013, 210(3):837-855.
72. Kai Jiang, Chu Wang, Yunqing Huang and Pingwen Zhang. Discovery of New Metastable Patterns in Diblock Copolymers. *Communications in Computational Physics*, 2013, 14(2):443-460.
73. Qin Liang, Jianfeng Li, Pingwen Zhang and Je Z.Y. Chen. Modified Diffusion Equation for the Wormlike-chain Statistics in Curvilinear Coordinates. *Journal of Chemical Physics*, 2013, 138(24):244910.
74. Weiquan Xu, Kai Jiang, Pingwen Zhang and An-Chang Shi. A Strategy to Explore Stable and Metastable Ordered Phases of Block Copolymers. *Journal of Physical Chemistry B*, 2013, 117(17):5296-5405.
75. Han Wang, Dan Hu and Pingwen Zhang. Measuring the Spontaneous Curvature of Bilayer Membranes by Molecular Dynamics Simulations. *Communications in Computational Physics*, 2013, 13(4):1093-1106.
76. Gai Liu, Gang Du, Tiao Lu, Xiaoyan Liu, Pingwen Zhang and Xing Zhang. Simulation Study of Quasi-Ballistic Transport in Asymmetric DG-MOSFET by Directly Solving Boltzmann Transport Equation. *IEEE Transactions on Nanotechnology*, 2013, 12(2):168-173.
77. Tiejun Li, Pingwen Zhang and Wei Zhang. Nucleation Rate Calculation for the Phase Transition of Diblock Copolymers under Stochastic Cahn-Hilliard Dynamics. *Multiscale Modeling & Simulation*, 2013, 11(1):385-409.
78. Peiwen Ji, Song Jiang and Pingwen Zhang. Computable Modeling (Chinese). *SCIENCE CHINA Mathematics*, 2012, 42(6):1-18.
79. Wei Zhang, Tiejun Li and Pingwen Zhang. Numerical Study for the Nucleation of One-Dimensional Stochastic Cahn-Hilliard Dynamics. *Communications in Mathematical Sciences*, 2012, 10(4):1105-1132.
80. Wei Wang, Pingwen Zhang and Zhifei Zhang. Well-Posedness of Hydrodynamics on the Moving Elastic Surface. *Archive for Rational Mechanics and Analysis*, 2012, 206(3):953-995.
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