

CURRICULUM VITAE

Personal Particulars

Name: Tong Yang

Affiliation: Department of Applied Mathematics, The Hong Kong Polytechnic University, P.R. China

Email: tongyang@whu.edu.cn

Phone: 852-27666922

Education

PhD in Mathematics, University of California, Davis, USA	June 1993
MSc in Zhongshan University	July, 1990
BSc in Zhongshan University	July, 1987

Professional Career

- Kuok Group Professor in Mathematical Science, PolyU (郭氏集團數學科學教授) 02/2024-01/2029
- Chair Professor, The Hong Kong Polytechnic University(PolyU) 11/2022-present
- Hongyi Chair Professor, Wuhan University (Nopay leave from PolyU) 09/2024-12/2025
- Chair Professor of Mathematics, City University of Hong Kong 09/2007 – 11/2022
- Professor, City University of Hong Kong 07/2002 - 08/2007
- Associate Professor, City University of Hong Kong 07/1999 - 06/2002
- Assistant Professor/Lecturer, City University of Hong Kong 09/1994 - 06/1999
- Postdoctoral Member, Institute for Advanced Study, Princeton, USA 09/1993 - 08/1994

Distinctions and Academic Awards

- Foreign member, Academia Europaea, 2022.
- Member, Hong Kong Academy of Sciences, 2021.
- Member, The World Academy of Sciences, 2021.
- American Mathematical Society Fellow, 2021.
- The Hong Kong Research Grants Council-Senior Research Fellow, 2020.
- Ministry of Education Higher Education Outstanding Scientific Research Output Award (Science and Technology), China (First Prize), 2022 and 2019.
- Foreign member, the European Academy of Sciences, 2018.
- The President's Award, City University of Hong Kong, 2015 and 2016.
- State Natural Science Award (2nd class), P.R. China, 2012.
- Croucher Senior Research Fellowship, 2011.
- Grand Award of Research Excellence Awards, City University of Hong Kong, 2009.
- Changjiang Chair Professorship, the Ministry of Education of China, 2005.
- Joint Research Fund for Hong Kong and Macau Young Scholars, National Science Fund for Distinguished Young Scholars, 2004.
- Morningside Silver Medal of Mathematics, ICCM, 1998.

Current Research Areas

1. **Conservation laws:** Well-posedness theory and solution behavior, singularity analysis.
2. **Boltzmann equation:** Well-posedness theory and solution behavior, fluid dynamic limits, boundary layer theory, regularity analysis.
3. **Boundary layer theories:** Well-posedness theory and high Reynolds number limits.

Honors and Professional Positions

- Hongyi Guest Chair Professor, Wuhan University (12/2025-11/2030)
- Board member of Hong Kong Academy of Sciences (Since November 2022)
- Board member of Hong Kong SIAM (Since 2024)
- Honorary Professor of Chongqing University (2024-present)
- Sectional core member for ICM 2022
- 国家自然科学基金数学天元基金学术领导小组成员（2022年5月—2025年4月）.
- Member at large, Hong Kong Mathematical Society (since June 2020)
- The President of the Hong Kong Mathematical Society (May 2016-May 2020)
- Honorary Professor of Guangxi University (2019-2024)
- Visiting Chair Professor of Shanghai Jiao Tong University, China (since 10/2013)
- Visiting Chair Professor of Jinan University, China (2015-2018)
- Officer of Mathematics Division, European Academy of Sciences (2019-2023)
- Panel Member of the Physical Science Panel of Research Grants Council (RGC), HKSAR (7/2010- 6/2015; 11/2019-10/2025)
- Scientific Committee Member of the Hong Kong Scholar Scheme (2011-2025)
- Scientific Committee of MOE Key Lab on Scientific and Engineering Computing, Shanghai Jiao Tong University (2018-2021)

Editorial Work

Co-Editor-in-Chief

- Kinetic and Related Model, (2008-present)
- Communications in Mathematical Analysis and Applications, (2022-2025)
- Analysis and Applications, (2013-2017)

Associate-Editor-in-Chief

- Acta Mathematica Sinica, (2025-present)

Editorial Board

- London Mathematical Society: Bulletin and Journal, (2020-present)
- SIAM Journal on Mathematical Analysis, (2021-present)
- Chinese Annals of Mathematics, Series B, (2022-present)
- Annals of Applied Mathematics, (2015-present)
- Communications on Analysis and Computation (2023-present)
- Journal of Mathematical Analysis and Applications, (2017-2021)
- Communications in Mathematical Analysis and Applications, (2022-present)

Administration Posts

- Head of Department of Mathematics 08/2012 – 08/2018
- Associate Dean of College of Science and Engineering 09/2007 – 08/2011

Published / Accepted Journal Papers

1. Wei-xi Li, **Tong Yang** and Ping Zhang, Analyticity up to the boundary for the Prandtl and Navier-Stokes equations, to appear in Journal of London Mathematical Society.
2. Renjun Duan, Zongguang Li, Dongcheng Yang and **Tong Yang**, Ionic KDV structure in weakly collisional plasmas, to appear in Communications in Mathematical Physics.
3. Shengchuang Chang, Shuangqian Liu and **Tong Yang**, The spatially inhomogeneous Vlasov-Nordström-Fokker-Planck system in the intrinsic weak diffusion regime, to appear in Journal of Differential Equations.
4. **Tong Yang** and Mingying Zhong, Diffusion limit with optimal convergence rate of classical solutions to the Vlasov-Maxwell-Boltzmann system, *Advances in Mathematics* 489 (2026) 110800.
5. **Tong Yang** and Yu-Long Zhou, On the Boltzmann equation with strong kinetic singularity and its grazing limit from a new perspective, *Math. Ann.* 391 (2025), no. 4, 4911–4995. doi.org/10.1007/s00208-024-03046-w.
6. Renjun Duan, Shuangqian Liu and **Tong Yang**, The Boltzmann equation for plane Couette flow, *J. Eur. Math. Soc. (JEMS)* 27 (2025), no. 3, 1107–1183. doi.org/10.4171/jems/1390.
7. Shuaikun Wang and **Tong Yang**, Existence and smoothing effect of measure valued solution to the homogeneous Boltzmann equation with Debye-Yukawa potential, *SIAM J. Math. Anal.* 56 (2024), no. 5, 5969–5994. doi.org/10.1137/23M1562123.
8. Ke Chen, Wei-Xi Li and **Tong Yang**, Local well-posedness of the three dimensional linearized MHD boundary layer system, *Communications in Mathematical Analysis and Applications*, 3 (2024), no. 4, 483–500.
9. Renjun Duan, Ling-Bing He, **Tong Yang** and Yu-Long Zhou, Solutions to the non-cutoff Boltzmann equation in the grazing limit, *Ann. Inst. H. Poincaré Anal Non Linéaire* (2024), no. 1, 1-94. doi.org/10.4171/aihpc/72.
10. **Tong Yang** and Hongjun Yu, Spectrum structure and solution behavior of the Boltzmann equation with soft potentials, *Indiana University Mathematics Journal* 73 (2024), no. 1, 231–318.
11. **Tong Yang** and Yu-Long Zhou, An explicit coercivity estimate of the linearized quantum Boltzmann operator without angular cutoff, *Journal of Functional Analysis* 286(2024), no. 1, paper no. 110197.
12. Hailiang Li, **Tong Yang** and Mingying Zhong, Green's function and pointwise behavior of the one-dimensional Vlasov-Maxwell-Boltzmann system, *Archive for Rational*

Mechanics and Analysis 247 (2023), no. 5, paper no. 82.

13. **Tong Yang** and Zhu Zhang, Linear instability analysis on compressible Navier-Stokes equations with strong boundary layer, *Archive for Rational Mechanics and Analysis*, 247 (2023), no. 5, paper no. 83.
14. **Tong Yang** and Hongjun Yu, Spectrum structure and decay rate estimates on the Landau equation with Coulomb potential, *SCIENCE CHINA Mathematics*, 66(1), 37-78 (2023). doi.org/10.1007/s11425-020-1901-4.
15. Renjun Duan, Shuangqian Liu, **Tong Yang** and Zhu Zhang, Heat transfer problem for the Boltzmann equation in a channel with diffusive boundary condition, *Chinese Annals of Mathematics, Series B*, 43, 1071-1100 (2022). doi.org/10.1007/s11401-022-0378-6.
16. Wei-xi Li and **Tong Yang**, 3D hyperbolic Navier-Stokes equations in a thin strip: global well-posedness and hydrostatic limit in Gevrey space, *Communications in Mathematical Analysis and Applications*, 1(4), 471-502 (2022). doi.org/10.4208/cmaa.2022-0007.
17. Chengjie Liu, **Tong Yang** and Zhu Zhang, Analysis of the Tollmien-Schlichting wave in the Prandtl-Hartmann regime, *Journal de Mathematique Pures et Appliquees*, 165, 58-105 (2022). doi.org/10.1016/j.matpur.2022.07.004.
18. **Tong Yang**, Vector fields of cancellation for the Prandtl operators, *Communications in Mathematical Analysis and Applications*, 1(2), 345-354 (2022).
19. Hailiang Li, Shuangqian Liu and **Tong Yang**, The Navier-Stokes-Vlasov-Fokker-Planck system in bounded domains, *Journal of Statistical Physics*, 186(3), No. 42, 32 pp (2022).
20. Renjun Duan, Shuangqian Liu and **Tong Yang**, Global classical solutions for the Vlasov-Nordstrom-Fokker-Planck system, *SIAM Journal on Mathematical Analysis*, 53, 6164-6190 (2021).
21. Hai-Liang Li, **Tong Yang** and Mingying Zhong, Spectrum analysis for the Vlasov-Poisson-Boltzmann system, *Archive for Rational Mechanics and Analysis*, 241, 311-355 (2021).
22. Wei-Xi Li and **Tong Yang**, Well-posedness of the MHD boundary layer system in Gevrey function space without structural assumption, *SIAM Journal on Mathematical Analysis*, 53(3), 3236-3264.
23. Cheng-Jie Liu, Feng Xie and **Tong Yang**, Uniform regularity and vanishing viscosity limit for the incompressible non-resistive MHD system with transverse magnetic field, *Communications on Pure and Applied Analysis*, 20(7-8), 2725-2750 (2021).
24. Chengjie Liu, Yaguang Wang and **Tong Yang**, Study of boundary layers in compressible non-isentropic flows, *Methods and Applications of Analysis*, 28(4), 453-466 (2021).
25. Jingwei Hu, Kunlun Qi and **Tong Yang**, A new stability and convergence proof of the Fourier-Galerkin spectral method for the spatially homogeneous Boltzmann equation, *SIAM Journal on Numerical Analysis* (2021) doi.org/10.1137/20M1351813.

26. Hailiang. Li, **Tong Yang** and Mingying Zhong, Diffusion limit of the Vlasov-Poisson-Boltzmann system, *Kinetic and Related Models*, vol. 14, no. 2 (2021) 211-255.
27. Wei-Xi Li, Nader Masmoudi and **Tong Yang**, Well-posedness in Gevrey function space for 3D Prandtl equations without structural assumption, *Communications on Pure and Applied Mathematics* (2021) doi.org/10.1002/cpa./21989.
28. Ricardo Alonso, Yoshinori Morimoto, Weiren Sun and **Tong Yang**, Non-cutoff Boltzmann equation with polynomial decay perturbation, *Revista Matematica Iberoamericana*, 37(2021), no. 1, 189-292.
29. Huanyao Wen, **Tong Yang**, Xinhua Zhao and Changjiang Zhu, Optimal convergence rate of the vanishing shear viscosity limit for compressible Navier-Stokes equations with cylindrical symmetry, to appear in *Journal de Mathematique Pures et Appliquees*. DOI 10.1016/j.matpur.2020.09.003.
30. Chengjie Liu, Dehua Wang, Feng Xie and **Tong Yang**, Magnetic effects on the solvability of 2D MHD boundary layer equations without resistivity in Sobolev spaces, *Journal of Functional Analysis* 279 (2020) 108637.
31. Hailiang Li, **Tong Yang** and Mingying Zhong, Green's function and pointwise space-time behavior of the Vlasov-Poisson-Boltzmann equation, *Archive for Rational Mechanics and Analysis*, 235, 1011-1057(2020).
32. Wei-xi Li and **Tong Yang**, Well-posedness in Gevrey function space for the Prandtl equations with non-degenerate critical points, *Journal of European Mathematical Society*, 22, 717-775 (2020).
33. Cheng-Jie Liu, Feng Xie and **Tong Yang**, Justification of Prandtl ansatz for MHD boundary layer, *SIAM Journal on mathematical Analysis*, 51(3), (2019), 2748-2791.
34. Hongjie Dong, **Tong Yang** and Mingying Zhong, Exterior problem of the linear Vlasov-Poisson-Boltzmann system, *SIAM Journal on mathematical Analysis*, 51(3), 1792-1823 (2019).
35. Xulong Qin, **Tong Yang**, Zhengan Yao and Wenshu Zhou, Vanishing shear viscosity limit and boundary layer study for the planar MHD system, *Mathematical Models and Methods in Applied Sciences*, 1139-1174 (2019).
36. Chengjie Liu, Feng Xie and **Tong Yang**, MHD boundary layers in Sobolev spaces without monotonicity. I. Well-posedness theory, *Communications on Pure and Applied Mathematics*, vol. LXXII, 0063-0121 (2019).
37. Xie Feng and **Tong Yang**, Lifespan of solutions to MHD boundary layer equations with analytic perturbation of general shear flow, *Acta Mathematicae Applicatae Sinica*, vol. 35, no. 1 (2019), 209-229.
38. Xie Feng and **Tong Yang**, Global-in-time stability of 2D MHD boundary layer in the

- Prandtl-Hartmann Regime, *SIAM Journal on Mathematical Analysis*, 50(6), 5749-5760(2018).
39. Yongting Huang, Chengjie Liu and **Tong Yang**, Local-in-time well-posedness for compressible MHD boundary layer, *Journal of Differential Equations*, 266(6), 2978-3013 (2019).
 40. **Tong Yang** and Hongjun Yu, Global solution for the spatially inhomogeneous non-cutoff Kac equation, *SIAM Journal on Mathematical Analysis*, vol. 50, no. 4, 4503-4562 (2018).
 41. Chengjie Liu, Feng Xie and **Tong Yang**, A note on the ill-posedness of shear flow for the MHD boundary layer equations, *Science China Mathematics*, 61(11), 2065-2078 (2018).
 42. Hailiang Li, Yi Wang, **Tong Yang** and Mingying Zhong, Stability of nonlinear wave patterns to the bipolar Vlasov-Poisson-Boltzmann system, *Archive for Rational Mechanics and Analysis*, Vol. 228, no. 1, 39-127 (2018).
 43. Yoshinori Morimoto, Shuaikun Wang and **Tong Yang**, Moment classification of infinite energy solutions to the homogeneous Boltzmann equation, *Analysis and Applications*, vol. 15, no. 3, 391–411 (2017).
 44. Renjun Duan, Feimin Huang, Yong Wang and **Tong Yang**, Global Well-posedness of the Boltzmann equation with large amplitude initial data, *Archive for Rational Mechanics and Analysis*, vol. 225, no. 1, 375–424 (2017).
 45. Renjun Duan, Yuanjie Lei, **Tong Yang** and Huijiang Zhao, The Vlasov-Maxwell-Boltzmann system near Maxwellians in the whole space with very soft potentials, *Communications in Mathematical Physics*, vol. 351, no. 1, 95–153 (2017).
 46. Chengjie Liu, Yaguang Wang and **Tong Yang**, A well-posedness theory for the Prandtl equations in three space variables, *Advances in Mathematics*. vol. 308, 1074–1126, (2017).
 47. Yoshinori Morimoto, **Tong Yang** and Huijiang Zhao, Convergence to self-similar solutions for the Homogeneous Boltzmann Equation, *Journal of European Mathematical Society*, 19, no. 8, 2241-2267 (2017).
 48. Chengjie Liu and **Tong Yang**, Ill-posedness of the Prandtl equations in Sobolev spaces around a shear flow with general decay, *Journal de Mathematique Pures et Appliquees*, 108 (2017), 150-162.
 49. Yoshinori Morimoto, Shuaikun Wang and **Tong Yang**, Measure valued solutions to the spatially homogeneous Boltzmann equation without angular cutoff, *Journal of Statistical Physics*, vol.165, no. 5, 866–906 (2016).
 50. Chengjie Liu, Yaguang Wang and **Tong Yang**, Global existence of weak solutions to the three-dimensional Prandtl equations with a special structure, *Discrete and Continuous Dynamical Systems-S* 9 (2016), 2011-2029.
 51. Chunhua Jin and **Tong Yang**, Time periodic solution to the compressible Navier-Stokes

- equations in a periodic domain, *Acta Mathematica Scientia*, vol. 36, no. 4, 1015–1029, (2016).
52. Yong-Kum Cho, Yoshinori Morimoto, Shuaikun Wang and **Tong Yang**, Probability measures with finite moments and the homogeneous Boltzmann equation, *SIAM Journal on Mathematical Analysis*, vol. 48, no. 4, 2399-2413 (2016).
 53. Feimin Huang, Yi Wang, Yong Wang and **Tong Yang**, Justification of limit for the Boltzmann equation related to Korteweg theory, *Quarterly of Applied Mathematics*, vol. 74, no. 4, 719-764 (2016).
 54. **Tong Yang** and Hongjun Yu, Spectrum analysis of some kinetic equations, *Archive for Rational Mechanics and Analysis*, vol.222, no.2, 731-768 (2016).
 55. Cheng-Jie Liu, Ya-Guang Wang and **Tong Yang**, On the ill-posedness of the Prandtl equations in three-dimensional space, *Archive for Rational Mechanics and Analysis*, Vol. 220, Issue 1, (2016), 83-108.
 56. Hai-Liang Li, **Tong Yang**, Mingying Zhong, Spectrum analysis and optimal decay rates of the bipolar Vlasov-Poisson-Boltzmann equations, *Indiana University Mathematics Journal*, Vol. 65, Issue 2, (2016), 665-725.
 57. Hai-Liang Liu, **Tong Yang** and Mingying Zhong, Spectrum structure and behaviors of the Vlasov-Maxwell-Boltzmann systems, *SIAM Journal on Mathematical Analysis*, Vol. 48, Issue 1, (2016), 595-669.
 58. Yoshinori Morimoto and **Tong Yang**, Local existence of polynomial decay solutions to the Boltzmann equation for the soft potentials, *Analysis and Applications*, Vol. 13, Issue 6, (2015), 663-683.
 59. Chunhua Jin and **Tong Yang**, Time periodic solutions to 3D compressible Navier-Stokes system with external force in R^3 , *Journal of Differential Equations*, Vol. 259, Issue 7, (2015), 2576-2601.
 60. Xulong Qin, **Tong Yang**, Zhengan Yao and Wenshu Zhou, A study on the boundary layer for the planar magnetohydrodynamics system, *Acta Mathematica Scientia*, Vol. 35, Issue 4, (2015), 787-806.
 61. Yaguang Wang, Feng Xie and **Tong Yang**, Local well-posedness of Prandtl equations for compressible flow in two space variables, *SIAM Journal of Mathematical Analysis*, 47(1), (2015), 321-346.
 62. Xulong Qin, **Tong Yang**, Zheng-an Yao and Wenshu Zhou, Vanishing shear viscosity and boundary layer for the Navier-Stokes equations with cylindrical symmetry, *Archive for Rational Mechanics and Analysis*, 216 (2015), 1049-1086.
 63. Feimin Huang, Yi Wang, Yong Wang and **Tong Yang**, Vanishing viscosity of isentropic Navier-Stokes equations for interacting shocks, *Science China Mathematics*, Vol. 58, no. 4, 653-672, (2015).

64. Yoshinori Morimoto, Shuaikun Wang and **Tong Yang**, A New characterization and global regularity of infinite energy solutions to the homogeneous Boltzmann equation, *Journal de Mathematique Pures et Appliquees*, 9(103)(3), (2015), 809-829.
65. Radjesvarane Alexandre, Yaguang Wang, Chao-Jiang Xu and **Tong Yang**, Well-posedness of The Prandtl Equation in Sobolev Spaces, *Journal of American Mathematical Society*, 28(3), (2015), 745-784.
66. Yoshinori Morimoto and **Tong Yang**, Smoothing effect of the homogeneous Boltzmann equation with measure valued initial datum, *Ann. Inst. H. Poincaré Anal Non Linéaire*, 32 (2015), 429-442.
67. Shuangqian Liu, **Tong Yang** and Huijiang Zhao, Compressible Navier-Stokes Approximation to the Boltzmann Equation, *Journal of Differential Equations*, Vol 256 (2014), 3770-3816.
68. Hongxia Liu, **Tong Yang**, Huijiang Zhao and Qingyang Zou, One-dimensional Compressible Navier-Stokes Equations with Temperature Dependent Transport Coefficients and Large Data, *SIAM Journal on Mathematical Analysis.*, 46(3), (2014), 2185-2228.
69. Feimin Huang, Yi Wang, Yong Wang and **Tong Yang**, The Limit of the Boltzmann Equation to the Euler Equations for Riemann Problems, *SIAM Journal on Mathematical Analysis*, 45(3), (2013), 1741-1811.
70. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chaojiang Xu and **Tong Yang**, Local existence with mild regularity for the Boltzmann equation, *Kinetic and Related Models*, vol. 6, no. 4 (2013), 1011-1041.
71. Zhong Tan, **Tong Yang**, Huijiang Zhao and Qingyang Zou, Global Solutions to the One-dimensional Compressible Navier-Stokes-Poisson Equations with Large Data, *SIAM Journal on Mathematical Analysis*, vol. 45, no. 2 (2013), 547-571.
72. Renjun Duan, **Tong Yang** and Huijiang Zhao, The Vlasov-Poisson-Boltzmann System for Soft Potentials, *Mathematical Models and Methods in Applied Sciences*, vol. 23, no. 6 (2013), 979-1028.
73. Renjun Duan, Shuangqian Liu, **Tong Yang** and Huijiang Zhao, Stability of the nonrelativistic Vlasov-Maxwell-Boltzmann system for angular non-cutoff potentials, *Kinetic and Related Models*, vol. 6, no. 1, 159-204, (2013).
74. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Smoothing Effect of weak solutions for spatially homogeneous Boltzmann Equation without angular cutoff, *Kyoto Journal of Mathematics*, 52 (2012), no.3, 433-463.
75. Alberto Bressan, Feimin Huang, Yi Wang and **Tong Yang**, On the convergence rate of vanishing viscosity approximations for nonlinear hyperbolic systems, *SIAM Journal on Mathematical Analysis*, vol. 44, no. 5, 3537-3563, (2012).

76. Zhouping Xin, **Tong Yang** and Hongjun Yu, The Boltzmann Equation with soft potentials near the Local Maxwellian, *Archive for Rational Mechanics and Analysis*, 206 (2012), no. 1, 239-296.
77. Renjun Duan, **Tong Yang** and Huijiang Zhao, The Vlasov-Poisson-Boltzmann System in the Whole Space: The Hard Potential Case, *Journal of Differential Equations* 252 (2012), no. 12, 6356-6386.
78. Chunhua Jin, Jingxue Yin and **Tong Yang**, Waiting time for a non-Newtonian polytropic filtration equation with convection, *Journal of Differential Equations* 252 (2012), no. 9, 4862-4885.
79. Feimin Huang, Ming Mei, Yong Wang and **Tong Yang**, Long-Time Behavior of Solutions to the Bipolar Hydrodynamic Model of Semiconductors with Boundary Effect, *SIAM Journal of Mathematical Analysis*, vol. 44, no. 2, 1134-1164, (2012).
80. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Boltzmann equation without angular cutoff in the whole space: I, Global existence for soft potential, *Journal of Functional Analysis*, 262 (2012), 915-1010.
81. Feimin Huang, Yi Wang and **Tong Yang**, Vanishing Viscosity Limit of the Compressible Navier-Stokes Equations for Solutions to Riemann Problem, *Archive for Rational Mechanics and Analysis*, 203 (2012), no. 2, 379-413.
82. **Tong Yang** and Hongjun Yu, Global solutions to the relativistic Landau-Maxwell system in the whole space, *Journal de Mathematique Pures et Appliquees*, (9)97 (2012), no. 6, 602-634.
83. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Uniqueness of solutions for the non-cutoff Boltzmann Equation with soft potential, *Kinetic and Related Models*, Vol. 4, No. 4, (2011), 919-934.
84. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, The Boltzmann equation without angular cutoff in the whole space: Qualitative properties of solutions, *Archive for Rational Mechanics and Analysis*, 202 (2011) 599-661.
85. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Global existence and full regularity of the Boltzmann equation without angular cutoff, *Communications in Mathematical Physics*, 304, 513-581 (2011).
86. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Bounded Solutions of the Boltzmann Equation in the Whole Space, *Kinetic and Related Models*, Vol. 4, no. 1 (2011), 17-40.
87. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, The Boltzmann equation without angular cutoff in the whole space: III, Global existence for hard potential, *Analysis and Applications*, Vol. 9, No. 2 (2011), 113-134.

88. **Tong Yang** and Hongjun Yu, Optimal convergence rates of classical solutions for Vlasov-poisson-Boltzmann System, *Communications in Mathematical Physics*, 301, 319-355 (2011).
89. Feimin Huang, Yi Wang and **Tong Yang**, Fluid dynamic limit of the Boltzmann equation to the Riemann solutions of the Euler equations: I, Superposition of rarefaction waves and contact discontinuity, *Kinetic and Related Models*, Vol. 3, no. 4 (2010), 685-728.
90. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Global well-posedness theory for the spatially inhomogeneous Boltzmann equation without angular cutoff, *C. R. Math. Acad. Sci. Paris*, 348 (2010), no. 15-16, 867-871.
91. Pierre Degond and **Tong Yang**, Diffusion in a continuum model of self-propelled particles with alignment interaction, *Mathematical Models and Methods in Applied Sciences*, Vol. 20, issue: supp01 (2010), 1459-1490.
92. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Regularizing effect and local existence for non-cutoff Boltzmann equation, *Archive for Rational Mechanics and Analysis*, Vol. 198 (2010), No. 1, 39-123.
93. **Tong Yang** and Hongjun Yu, Global classical solutions for Vlasov-Maxwell-Fokker-Planck system, *SIAM Journal of Mathematical Analysis*, 42 (2010), no. 1, 459-488.
94. **Tong Yang** and Hongjun Yu, Hypocoercivity of the relativistic Boltzmann and Landau equations in the whole space, *Journal of Differential Equations*, 248 (2010), no. 6, 1518-1560.
95. Hongfang Ma, Seiji Ukai and **Tong Yang**, Time periodic solutions of compressible Navier-Stokes equations, *Journal of Differential Equations*, 248 (2010), no. 9, 2275-2293.
96. Renjun Duan and **Tong Yang**, Stability of the one-species Vlasov-Poisson- Boltzmann system, *SIAM Journal of Mathematical Analysis*, Vol. 41, no. 6 (2010), 2353-2387.
97. Feimin Huang, Yi Wang and **Tong Yang**, Hydrodynamic limit of the Boltzmann equation with contact discontinuities, *Communications in Mathematical Physics*, 295 (2010), 293-326.
98. Hai-Liang Li, **Tong Yang** and Chen Zou, Time asymptotic behavior of the bipolar Navier-Stokes-Poisson system, *Acta Mathematica Scientia Ser. B Engl. Ed.* 29 (2009), no. 6, 1721-1736.
99. Qianshun Chang and **Tong Yang**, A Lattice Boltzmann Method for Image Denoising, *IEEE Transactions on Image Processing*, vol. 18, no. 2 (2009), 2797-2802.
100. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Existence of local solutions for Boltzmann equation without angular cutoff, *C. R. Math. Acad. Sci. Paris*, 347 (2009), no. 21-22, 1237-1242.
101. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong**

- Yang**, Regularity of solutions for Boltzmann equation without angular cutoff, C. R. Math. Acad. Sci. Paris, 347 (2009), no. 13-14, 747-752.
102. Jie Liao, Weike Wang and **Tong Yang**, Lp convergence rates of diffusion waves for multi-dimensional Euler equations with damping, Journal of Differential Equations Volume 247, issue 1 (2009), Pages 303-329.
 103. Renjun Duan, Seiji Ukai and **Tong Yang**, A Combination of Energy Method and Spectral Analysis for the Study on Systems for Gas Motions, Frontiers of Mathematics in China, Vol. 4, No. 2 (2009), 253-282.
 104. **Tong Yang** and Hongjun Yu, Optimal convergence rates of the Landau Equation with external force in the whole space, Acta Mathematica Scientia (2009), 29(4), 1035-1062.
 105. Seiji Ukai, **Tong Yang** and Huijiang Zhao, Exterior problem of Boltzmann equation with temperature difference, Communications in Pure and Applied Analysis, Vol. 8 (2009), no. 1, 473-491.
 106. Zaihong Jiang and **Tong Yang**, A new nonlinear functional for general scalar hyperbolic conservation laws, Journal of Differential Equations, 246 (2009), 4284-4308.
 107. Seiji Ukai, **Tong Yang** and Huijiang Zhao, Stationary solutions to the exterior problem for the Boltzmann equation, I. Existence, Discrete and Continuous Dynamical Systems, Vol. 23 (2009), no. 1-2, 495-520.
 108. Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Regularity of solutions to the spatially homogeneous Boltzmann equation without Angular cut-off, Discrete and Continuous Dynamical Systems, A special issue on Boltzmann Equations and Applications, Vol. 24 (2009), No. 1, 187-212.
 109. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chao-Jiang Xu and **Tong Yang**, Uncertainty principle and kinetic equations, Journal of Functional Analysis, Vol. 255 (2008), no.8, 2013-2066.
 110. Feimin Huang, Zhouping Xin and **Tong Yang**, Contact discontinuity with general perturbations for gas motions, Advances in Mathematics, Vol. 219 (2008), no.4, 1246-1297.
 111. Zhaohui Huo, Yoshinori Morimoto, Seiji Ukai and **Tong Yang**, Regularity of solutions for spatially homogeneous Boltzmann equation without angular cutoff, Kinetic and Related Models, Vol. 1 (2008), no. 3, 453-489.
 112. Renjun Duan, Meng-Rong Li and **Tong Yang**, Propagation of Singularities in the Solutions to the Boltzmann Equation near Equilibrium, Mathematical Models and Methods in Applied Sciences, Vol. 18 (2008), no.7, 1093-1114.
 113. Claude Bardos, C. David Levermore, Seiji Ukai and **Tong Yang**, Kinetic equations and an incompressible fluid dynamical limit that recovers viscous heating, Bulletin of the Institute of Mathematics, Academia Sinica, 3 (2008), no. 1, 1-49.

114. Renjun Duan, Seiji Ukai, **Tong Yang** and Huijiang Zhao, Optimal Decay Estimates on the Linearized Boltzmann Equation with Time Dependent Force and their Applications, *Communications in Mathematical Physics*, Vol. 277, No. 1 (2008), 189-236.
115. Radjesvarane Alexandre, Yoshinori Morimoto, Seiji Ukai, Chaojiang Xu and **Tong Yang**, Uncertainty Principle and Regularity for Boltzmann Type Equations, *Comptes rendus Mathématique*, Vol. 345, No. 12, 673-677, (2007).
116. Weike Wang and **Tong Yang**, Stability of planar diffusion waves for two dimensional Euler equations with damping, *Journal of Differential Equations*, 242, no. 1, 40-71, (2007).
117. Weike Wang, **Tong Yang** and Xiongfeng Yang, Existence of boundary layers to the Boltzmann equation with cutoff soft potentials, *Journal of Mathematical Physics*, 48 (2007), no. 7, 073304, 21pp.
118. Renjun Duan, Hongxia Liu, Seiji Ukai and **Tong Yang**, Optimal L_p - L_q Convergence rates for the Navier-Stokes equations with potential force, *Journal of Differential Equations*, 238 (2007), no.1, 220-233.
119. Hongxia Liu and **Tong Yang**, A nonlinear functional for general scalar hyperbolic conservation laws, *Journal of Differential Equations*, 235 (2007), no.2, 658-667.
120. Renjun Duan, Seiji Ukai, **Tong Yang** and Huijiang Zhao, Optimal convergence rates for the compressible Navier-Stokes equations with potential forces, *Mathematical Models and Methods in Applied Sciences*, 17 (2007), no. 5, 737-758.
121. Renjun Duan, **Tong Yang** and Changjiang Zhu, Navier-Stokes equations with degenerate viscosity, vacuum and gravitational force, *Mathematical Methods in the Applied Sciences*, 30 (2007), no.3 347-374.
122. Chunpeng Wang, **Tong Yang** and Jingxue Yin, Self-similar solutions and asymptotic behavior for a class of degenerate and singular diffusion equations, *Proceedings of the Royal Society of Edinburgh Proceeding A*, 137A, 581-6-2, (2007).
123. Renjun Duan, **Tong Yang** and Changjiang Zhu, Existence of stationary solutions to the Vlasov-Poisson-Boltzmann system, *Journal of Mathematical Analysis and Applications*, 327 (2007), 425-434.
124. **Tong Yang**, Mei Zhang and Changjiang Zhu, Existence of strong travelling wave profiles to 2×2 systems of viscous conservation laws, *Proceedings of the American Mathematical Society*, Vol. 135 (2007), no. 6, 1843-1849.
125. Seiji Ukai, **Tong Yang** and Huijiang Zhao, Convergence rate to stationary solutions for Boltzmann equation with external force, *Chinese Annals of Mathematics, Ser. B*, 27 (2006), no. 4, 363-378.
126. Seiji Ukai and **Tong Yang**, The Boltzmann equation in the space $L^2 \cap L_p^\infty$: Global and time-periodic solutions, *Analysis and Applications*, 4 (2006), no. 3, 263-310.

127. Seiji Ukai, **Tong Yang** and Huijiang Zhao, Convergence rate for the compressible Navier-Stokes equations with external force, *Journal of Hyperbolic Differential Equations*, 3 (2006), no. 3, 561-574.
128. Weike Wang, **Tong Yang** and Xiongfeng Yang, Nonlinear stability of boundary layers of the Boltzmann equation for cutoff hard potentials, *Journal of Mathematical Physics*, 47 (2006), 083301.
129. Yinbin Deng and **Tong Yang**, Multiplicity of stationary solutions to the Euler-Poisson equations, *Journal of Differential Equations*, 231 (2006), 252-289.
130. **Tong Yang** and Huijiang Zhao, Global existence of classical solutions to the Vlasov-Poisson-Boltzmann system, *Communications in Mathematical Physics*, 268, 569-605 (2006).
131. **Tong Yang** and Huijiang Zhao, A new entropy method for the Boltzmann equation, *Journal of Mathematical Physics*, 47, 053301 (2006).
132. Jiale Hua and **Tong Yang**, An improved convergence rate of Glimm scheme for general systems of hyperbolic conservation laws, *Journal of Differential Equations*, 231 (2006), 92-107.
133. Renjun Duan, **Tong Yang** and Changjiang Zhu, L1 and BV-type stability of the Boltzmann equation with external forces, *Journal of Differential Equations*, 227 (2006), no. 1, 1-28.
134. Feimin Huang and **Tong Yang**, Stability of contact discontinuity for the Boltzmann equation, *Journal of Differential Equations*, 229 (2006), 698-742.
135. **Tong Yang**, Hongjun Yu and Huijiang Zhao, Cauchy problem for the Vlasov-Poisson-Boltzmann system, *Archive for Rational Mechanics and Analysis*, 182, No. 3, 415-470, (2006).
136. Tai-Ping Liu, **Tong Yang**, Shih-Hsien Yu and Huijiang Zhao, Nonlinear stability of rarefaction waves for Boltzmann equation, *Archive for Rational Mechanics and Analysis*, 181 (2006), no. 2, 333-371.
137. Renjun Duan, **Tong Yang** and Changjiang Zhu, Boltzmann equation with external force and Vlasov-Poisson-Boltzmann system in infinite vacuum, *Discrete and Continuous Dynamical Systems*, 16 (2006), no. 1, 253-277.
138. **Tong Yang**, Singular behavior of vacuum states for compressible fluid, *Journal of Computational and Applied Mathematics*, 190 (2006), 211-231.
139. Seiji Ukai, **Tong Yang** and Huijiang Zhao, Global solutions to the Boltzmann equation with external forces, *Analysis and Applications*, 3 (2005), no. 2, 157-193.
140. Renjun Duan, **Tong Yang** and Changjiang Zhu, Global existence to Boltzmann equation with external force in infinite vacuum, *Journal of Mathematical Physics*, 46 (2005), 053307-13.

141. **Tong Yang** and Huijiang Zhao, A half-space problem for the Boltzmann equation with specular reflection boundary condition, *Communications in Mathematical Physics*, 255 (2005), no. 3, 683-727.
142. Chao-Jiang Xu and **Tong Yang**, Local existence with physical vacuum boundary condition to Euler equations with damping, *Journal of Differential Equations*, 210 (2005), 217-231.
143. **Tong Yang** and Huijiang Zhao, Asymptotics toward strong rarefaction waves for 2×2 systems of viscous conservation laws, *Discrete and Continuous Dynamical Systems-Series A*, 12 (2005), no. 2, 251-282.
144. Chunpeng Wang, **Tong Yang** and Jingxue Yin, A class of self-similar solutions to a singular and degenerate diffusion equation, *Nonlinear Analysis*, 60/4 (2005), 775-796.
145. Alberto Bressan and **Tong Yang**, On the convergence rate of vanishing viscosity approximations, *Communications on Pure and Applied Mathematics*, LVII (2004), 1075-1109.
146. Alberto Bressan and **Tong Yang**, A sharp decay estimate for positive nonlinear waves, *SIAM Journal of Mathematical Analysis*, 36 (2004), no. 2, 659-677.
147. Tai-Ping Liu, **Tong Yang** and Shih-Hsien Yu, Energy method for Boltzmann equation, *Physica D*, 188 (2004), 178-192.
148. Kenji Nishihara, **Tong Yang** and Huijiang Zhao, Nonlinear stability of strong rarefaction waves for compressible Navier-Stokes equations, *SIAM Journal of Mathematical Analysis*, 35 (2004), no. 6, 1561-1597.
149. Tao Luo and **Tong Yang**, Global structure and asymptotic behavior of weak solutions to flood wave equations, *Journal of Differential Equations*, 207(2004), 117-160.
150. Chiun-Chuan Chen, Tai-Ping Liu and **Tong Yang**, Existence of boundary layer solutions to the Boltzmann equation, *Analysis and Applications*, 2 (2004), no. 4, 337-363.
151. Seiji Ukai, **Tong Yang** and Shih-Hsien Yu, Nonlinear stability of boundary layers of the Boltzmann equation, I. $M^\infty < -1$, *Communications in Mathematical Physics*, 244 (2004), no. 1, 99-109.
152. **Tong Yang** and Huijiang Zhao, BV estimates on Lax-Friedrichs' scheme for a model of radiating gas, *Applicable Analysis*, Vol.83 (2004), no. 5, p533-539.
153. Seiji Ukai, **Tong Yang** and Shih-Hsien Yu, Nonlinear boundary layers of the Boltzmann equation: I, Existence, *Communications in Mathematical Physics*, 236 (2003), 373-393.
154. Seungyeal Ha and **Tong Yang**, L1 stability for systems of hyperbolic conservation laws with a resonant moving source, *SIAM Journal of Mathematical Analysis*, 34 (2003), no. 5, 1226-1251.

155. Dexing Kong and **Tong Yang**, Asymptotic behavior of global classical solutions of quasilinear hyperbolic systems, *Communications in Partial Differential Equations*, 28 (2003), nos. 5&6, 1203-1220.
156. Yinbin Deng, Jianlin Xiang and **Tong Yang**, Blowup phenomena of the Euler-Poisson equations for gaseous stars, *Journal of Mathematical Analysis and Applications*, 286 (2003) 295-306.
157. Seak-Weng Vong, **Tong Yang** and Changjiang Zhu, Compressible Navier-Stokes equations with degenerate viscosity coefficient and vacuum (II), *Journal of Differential Equations*, 192 (2003), 475-501.
158. **Tong Yang** and Changjiang Zhu, Non-existence of global smooth solutions to symmetrizable nonlinear hyperbolic systems, *Proceedings of the Royal Society of Edinburgh*, 133A (2003), 719-728.
159. **Tong Yang**, Convergence rate of Glimm scheme for general systems of hyperbolic conservation laws, *Taiwanese Journal of Mathematics*, 7 (2003), No. 2, 195-205.
160. De-Xing Kong and **Tong Yang**, A note on "Well-posedness theory for hyperbolic conservation laws", *Appl. Math. Lett.*, 16 (2003), no. 2, 143-146.
161. Weike Wang and **Tong Yang**, Pointwise estimates and L_p convergence rates to diffusion waves for p-system with damping, *Journal of Differential Equations*, 187 (2003), 310-336.
162. Yinbin Deng, Tai-Ping Liu, **Tong Yang** and Zheng-an Yao, Solutions with vacuum of Euler-Poisson equations, *Archive for Rational Mechanics and Analysis*, 164 (2002), no. 3, 261-285.
163. Tai-Ping Liu and **Tong Yang**, Weak solutions of general systems of hyperbolic conservation laws, *Communications in Mathematical Physics*, 230 (2002), no. 2, 289-327.
164. **Tong Yang** and Changjiang Zhu, Compressible Navier-Stokes equations with degenerate viscosity coefficient and vacuum, *Communications in Mathematical Physics*, 230 (2002), no. 2, 329-363.
165. **Tong Yang**, Huijiang Zhao and Changjiang Zhu, BV Estimates of Lax- Friedrichs' Scheme for a Class of Nonlinear Hyperbolic Conservation Laws, *Proceedings of the American Mathematical Society*, 131 (2003), no. 4, 1257-1266.
166. **Tong Yang** and Huijiang Zhao, A vacuum problem for the one-dimensional compressible Navier-Stokes equations with density-dependent viscosity, *Journal of Differential Equations*, 184 (2002), 163-184.
167. **Tong Yang** and Fahuai Yi, A Free Boundary Problem for a Hyperbolic System, *Discrete and Continuous Dynamical Systems*, 7 (2001), 763-780.
168. **Tong Yang**, Zheng-an Yao and Changjiang Zhu, Compressible Navier-Stokes equations

- with density-dependent viscosity and vacuum, *Communications in Partial Differential Equations*, 26 (2001), 965-981.
169. Weike Wang and **Tong Yang**, The pointwise estimates of solutions to Euler equations with damping in multi-dimensions, *Journal of Differential Equations*, 173 (2001), 410-450.
 170. Ling Hsiao and **Tong Yang**, Asymptotics of initial boundary value problems for hydrodynamic and drift diffusion models for semiconductors, *Journal of Differential Equations*, 170 (2001), 472-493.
 171. Tao Luo, Roberto Natalini and **Tong Yang**, Global BV solutions for the p-system with relaxation, *Journal of Differential Equations*, 162 (2000), 174-198.
 172. **Tong Yang** and Changjiang Zhu, Existence and non-existence of global smooth solutions for p-system with relaxation, *Journal of Differential Equations*, 161 (2000), 321-336.
 173. **Tong Yang**, Huijiang Zhao and Changjiang Zhu, Asymptotic behavior of solutions to a hyperbolic system with relaxation and boundary effect, *Journal of Differential Equations*, 163 (2000), 348-380.
 174. Tao Luo, Zhou-Ping Xin and **Tong Yang**, Interface behaviour of compressible Navier-Stokes equations with vacuum, *SIAM Journal of Mathematical Analysis*, 31 (2000), 1175-1191.
 175. **Tong Yang**, Changjiang Zhu and Yongshu Zheng, Existence of global smooth solutions for Euler equations with symmetry (II), *Nonlinear Analysis, TMA*, 41 (2000), 187-203.
 176. **Tong Yang**, Some recent results on compressible flow with vacuum, *Taiwanese Journal of Mathematics*, 4 (2000), no. 1, 33-44.
 177. Tai-Ping Liu and **Tong Yang**, Compressible flow with vacuum and physical singularity, *Methods and Applications of Analysis*, 7 (2000), no. 3, 495-510.
 178. Tao Luo and **Tong Yang**, Interaction of elementary wave for compressible Euler equations with frictional damping, *Journal of Differential Equations*, 161 (2000), 42-86.
 179. Kenji Nishihara, Weike Wang and **Tong Yang**, L_p-convergence rate to nonlinear diffusion waves for p-system with damping, *Journal of Differential Equations*, 161 (2000), 191-218.
 180. Tai-Ping Liu and **Tong Yang**, L₁ stability of weak solutions for 2 × 2 systems of hyperbolic conservation laws, *Journal of American Mathematical Society*, 12 (1999), 729-774.
 181. Tai-Ping Liu and **Tong Yang**, Well-posedness theory for hyperbolic conservation laws, *Communications in Pure and Applied Mathematics*, 52 (1999), 1553-1586.
 182. Tai-Ping Liu and **Tong Yang**, A new entropy functional for scalar conservation law, *Communications on Pure and Applied Mathematics*, 52 (1999), 1427-1442.

183. Alberto Bressan, Tai-Ping Liu and **Tong Yang**, L1 stability estimates for $n \times n$ conservation laws, *Archive for Rational Mechanics and Analysis*, 149 (1999), 1-22.
184. Lung-an Ying, **Tong Yang** and Changjiang Zhu, Nonlinear stability of strong detonation waves for a dissipative model, *Journal of Differential Equations*, 151 (1999), 134-160.
185. Hailiang Liu, Jinghua Wang and **Tong Yang**, Nonlinear stability and existence of stationary discrete travelling waves for the relaxing schemes, *Japan Journal of Industrial and Applied Mathematics*, 16 (1999), 195-224.
186. **Tong Yang**, Euler equations with spherical symmetry and outgoing absorbing boundary, *Communications in Partial Differential Equations*, 24(1& 2) (1999), 1-23.
187. Tai-Ping Liu and **Tong Yang**, L1 stability of conservation laws with coinciding Hugoniot and characteristic curves, *Indiana University Journal of Mathematics*, 48 (1999), 237-247.
188. Kenji Nishihara and **Tong Yang**, Boundary effect on asymptotic behavior of solutions to the p-System with linear damping, *Journal of Differential Equations*, 156 (1999), 439-458.
189. Lung-an Ying, **Tong Yang** and Changjiang Zhu, The rate of asymptotic convergence of strong detonations for a model problem, *Japan Journal of Industrial and Applied Mathematics*, 16 (1999), 467-487.
190. Tai-Ping Liu, Zhou-Ping Xin and **Tong Yang**, Vacuum states for compressible flow, *Discrete and Continuous Dynamical Systems*, 4 (1998), 1-32.
191. Tao Luo and **Tong Yang**, Global weak solutions for elastic equations with damping and different end states, *Proceedings of the Royal Society of Edinburgh*, 128A (1998), 797-807.
192. Ling Hsiao, Tao Luo and **Tong Yang**, Global BV solutions for compressible Euler equations with spherical symmetry and damping, *Journal of Differential equations*, 146 (1998), 203-225.
193. **Tong Yang**, Changjiang Zhu and Huijiang Zhao, Compactness framework of L_p approximate solutions for scalar conservation laws, *Journal of Mathematical Analysis and Applications*, 220 (1998), 164-186.
194. Hailiang Liu, Jinghua Wang and **Tong Yang**, Stability in relaxation scheme with nonconvex flux, *SIAM Journal of Mathematical Analysis*, 29 (1998), 18-29.
195. Ming Mei and **Tong Yang**, Convergence rates to travelling waves for a nonconvex relaxation model, *Proceedings of the Royal Society of Edinburgh*, 128 (1998), 1053-1068.
196. Tai-Ping Liu and **Tong Yang**, Uniform L1 boundedness of solutions of hyperbolic conservation laws, *Methods and Applications of Analysis*, 4 (1997), 339-355.

197. **Tong Yang**, Zheng-an Yao and Changjiang Zhu, Existence of global weak solutions for a viscoelastic model with relaxation, *Applicable Analysis*, 67 (1997), 313-326.
198. Tai-Ping Liu and **Tong Yang**, Compressible Euler equations with vacuum, *Journal of Differential Equations*, 140 (1997), 223-237.
199. Hongxia Liu, Longwei Lin and **Tong Yang**, Existence of globally bounded continuous solutions for nonisentropic gas dynamics equations, *Journal of Mathematical Analysis and Applications*, 209 (1997), 492-506.
200. Hailiang Liu, Jinghua Wang and **Tong Yang**, Existence of the discrete travelling waves for a relaxing scheme, *Applied Mathematics Letters*, 10 (1997), 117-122.
201. Hailiang liu, Ching Wah Woo and **Tong Yang**, Decay rate for travelling waves of a relaxation model, *Journal of Differential Equations*, 134 (1997), 343-367.
202. **Tong Yang**, Changjiang Zhu and Huijiang Zhao, Global smooth solutions for a class of quasilinear hyperbolic systems with dissipative terms, *Proceedings of the Royal Society of Edinburgh*, 127A (1997), 1311-1324.
203. Lung-an Ying, **Tong Yang** and Changjiang Zhu, Existence of global smooth solutions for Euler equations with symmetry, *Communications in Partial Differential Equations*, 22 (1997), 1361-1387.
204. **Tong Yang**, A functional integral approach to shock wave solutions of Euler equations with spherical symmetry (II), *Journal of Differential Equations*, 130 (1996), 162-178.
205. **Tong Yang**, A functional integral approach to shock wave solutions of the Euler equations with spherical symmetry, *Communications in Mathematical Physics*, 171 (1995), 607-638.
206. Longwei Lin and **Tong Yang**, Convergence of the viscosity method for the systems of isentropic gas dynamics in Lagrangian coordinates, *Journal of Differential Equations*, 102 (1993), 330-341.
207. Longwei Lin and **Tong Yang**, Existence and nonexistence of global continuous solutions to Riemann problem for damped p-system, *Acta Mathematica Scientia*, 13 (1993), 1-12.
208. Longwei Lin and **Tong Yang**, Convergence of the Lax-Friedrichs' scheme for isentropic gas dynamics in Lagrangian coordinates, *Communications in Partial Differential Equations*, 16 (1991), 1441-1460.
209. Longwei Lin and **Tong Yang**, Existence and nonexistence of global smooth Solutions for damped p-system with 'really large' initial data, *Journal of Partial Differential Equations*, 4 (1991), 45-51.
210. Longwei Lin and **Tong Yang**, Viscosity method for the 2×2 quasilinear hyperbolic conservation laws, *Journal of Mathematical Research and Exposition*, 10(1990), 475-484.

Lecture Notes

Seiji Ukai and **Tong Yang**, Mathematical Theory of Boltzmann Equation, Lecture Notes Series, no. 8, Liu Bie Ju Centre for Mathematical Sciences, City University of Hong Kong, March 2006.

Chapter in Book

Seiji Ukai and **Tong Yang**, Stationary Problems of the Boltzmann Equation, HANDBOOK OF DIFFERENTIAL EQUATIONS, Stationary Partial Differential Equations, volume 5, 371-485, Edited by M. Chipot, 2008 Elsevier B.V.

Research Projects

General Research Fund (GRF) (Named Competitive Earmarked Research Grant. before) (Role of Principal Investigator)

Project title	Awarded amount HK\$	Period
Spectrum structure and solution behaviour of quantum Boltzmann equation	910,742	01/01/2025-31/12/2027
Transition of the spectrum structures in the grazing limit and its applications	877,079	01/01/2024-31/12/2026
Dispersive structures in kinetic models for collisional plasma	783,000	01/01/2023-31/12-2025
Analysis on the Orr-Sommerfeld Equations for the Incompressible MHD system	598,015	01/01/2022-31/12/2024
RGC Senior Research Fellow 2020/21	7,798,380	01/01/2021-31/12/2025
MHD boundary layer theories and beyond	899,792	01/01/2021-31/12/2023
Some Mathematical Theories for High Reynolds Number Limit	753,667	01/09/2019-31/08/2022
Instability and Critical Regularity Indices for Degenerate PDEs of Prandtl-typed Systems	684,585	01/08/2018-31/07/2021
Stability and Instability Analysis of Compressible Fluid with non-slip Boundary Condition	488,501	01/08/2016-31/07/2019
Exterior problems for the Vlasov-Maxwell	933,362	01/09/2015 - 31/08/2018

System

Regularization of Measure Valued Solutions to the Boltzmann Equation and Some Related Problems	1,003,876	01/07/2014 - 30/06/2017
Mathematical Theories on the Prandtl System in Sobolev Spaces	868,303	01/01/2014 - 31/12/2016
Justification of Limits to the Compressible Euler Equations with Wave Interactions	700,000	01/11/2012 - 31/10/2015
Well-posedness Theory of Kinetic Equations in a General Setting	1,002,000	01/12/2011 - 30/11/2014
Hydrodynamic Limits of the Boltzmann Equation with Contact Discontinuities	655,700	01/08/2010 - 06/03/2014
Kinetic Theory of Boundary Layer Problems without Angular Cut-off	681,540	01/09/2009 - 16/04/2013
Interior and Exterior Problems for Kinetic Equations	293,700	01/10/2008 - 17/04/2012
Some Problems on Hypocoercivity for Kinetic Equations	445,000	01/10/2007 - 16/03/2011
Some Mathematical Theories of the 'Ghost-effect' in the Boltzmann Equation	388,460	01/08/2006 - 08/02/2010
Some Problems on the Boltzmann Equation with Force	463,600	01/09/2005 - 12/02/2008
Stability of Nonlinear Wave Patterns for Boltzmann Equation	318,000	01/09/2004 - 07/02/2007
Some Vacuum Problems to Boltzmann equation and related Fluid Dynamic Systems	324,000	01/09/2003 - 08/11/2005
Behaviour of Solutions to Boltzmann Equation with or without Cutoff	293,370	01/12/2001 - 01/09/2004
Boundary Layer of Boltzmann Equation	300,000	01/08/2002 - 19/01/2004
Vacuum States for Compressible Flow	287,817	01/12/2000 - 28/01/2003
Nonlinear Functionals for Glimm Scheme and BV Entropy Solutions	405,000	01/10/1999 - 18/10/2002

Lax-Friedrichs' Scheme and Nonlinear Functionals for Conservation Laws	425,000	01/10/1998 - 01/03/2001
L_1 Well-posedness of Hyperbolic Conservation Laws	416,000	01/12/1997 - 30/07/1999
Existence and Non-existence of Regular Solutions and Boundary Layer Problem	474,000	01/12/1996 - 26/02/1999
Mathematical Theory of Conservation Laws	331,000	01/12/1995 - 28/02/1998

Joint Research Fund for Hong Kong and Macau Young Scholars, National Science Fund for Distinguished Young Scholars, National Natural Science Foundation of China (NSFC) (Role of Principal Investigator)

Project title	Awarded amount	Period
Partial Differential Equations	RMB400,000	01/01/2003 - 31/12/2006

The National Natural Science Foundation of China (NSFC) and the Research Grants Council (RGC) of Hong Kong Joint Research Scheme (Role of Principal Investigator)

Project title	Awarded amount HK\$	Period
Mathematical Theories of Some Kinetic and Fluid Models	730,751	01/01/2013 - 31/12/2016

CityU Strategic Research Grant (SRG) / CityU Direct Allocation Grant (DAG) / CityU Small-scale Research Grant (SMA) (Role of Principal Investigator)

Project title	Awarded amount HK\$	Period
Nonlinear Functional Approach to the Study of Systems of Hyperbolic Conservation Laws	165,377	01/04/2009 - 18/01/2010
Large Time Behavior of Solutions to Kinetic Equations with Singular Angular Kernels	172,261	01/04/2008 - 12/10/2009
Boltzmann Equation with Debye-Yukawa Potential	180,000	0/04/2007 - 16/04/2009
L^1 and BV Stabilities of Solutions to the Boltzmann Equation and Some Related Systems	180,000	01/04/2006 - 26/07/2007

Some Problems on the Boltzmann Equation with Boundary Effects	180,000	01/07/2005 - 23/06/2006
Convergence Rates of Vanishing Viscosity Approximations and Some Numerical Schemes	170,000	01/07/2004 - 13/01/2006
Large Rarefaction Waves for Systems of Fluid Dynamics and Boltzmann Equation	158,000	01/06/2003 - 22/09/2004
BV Estimates for Lax-Friedrichs' Scheme	236,114	01/09/2002 - 18/09/2003
Singular Behaviour of Solutions to Euler-Poisson Equations with Vacuum	100,000	01/09/2001 - 10/07/2003
Interface and Large Time Behaviour of Compressible Navier-Stokes Equations with Density-dependent Viscosity and Vacuum	265,600	01/09/2000 - 22/01/2002
Shock Layer and Boundary Layer for Systems of Conservation Laws	--	01/08/1999 - 01/03/2001
Qualitative Analysis of BV Solutions of Euler Equations with Frictional Damping	--	01/12/1997 - 03/08/1999
Existence and Stability of Solutions of Hyperbolic Systems	--	01/04/1996 - 30/03/1998
Mathematical Theory of Shock Waves	--	01/05/1995 - 16/05/1997
Conservation Laws with Spherical Symmetry	--	28/02/1995 - 29/02/1996

Recent plenary talks

- International conference on Partial Differential Equations-Silkroad Mathematics Center series international conferences, April 1-21, 2017, Beijing, China.
- International conference on contemporary applied mathematics, May 7-11, 2018, LIASFMA, Shanghai, China.
- International forum on mathematics and history of mathematics-dedicated to the 100th birthday of Wen-Tsun Wu, May 9-10, 2019, Shanghai, China.
- The Chinese Mathematical Society 2021 Annual Conference, October 22-27, 2021, Kunming, China.
- XVIII international conference on hyperbolic problems: theory, numerics, applications, June 20-25, 2022, Malaga, Spain.

Doctoral students and their theses

ZHU, Changjiang	Quasilinear Hyperbolic Systems with Dissipation Effects, PhD thesis, City University of Hong Kong, Oct. 1999.
VONG, Seak Weng	Two Problems on the Navier-Stokes Equations and the Boltzmann Equation, PhD thesis, City University of Hong Kong, July 2005.
DUAN, Renjun	Some Mathematical Theories on the Gas Motion under the Influence of External Forcing, PhD thesis, City University of Hong Kong, Oct. 2008.
HUA, Jiale	Glimm Type Functional and One Dimensional Systems of Hyperbolic Conservation Laws, PhD thesis, City University of Hong Kong, July 2009.
LI, Li	The Asymptotic Behavior for the Vlasov-Poisson-Boltzmann System & Helio-stat with Spinning-elevation Tracking Mode, PhD thesis, City University of Hong Kong, July 2009.
CHEN, Jing	Some Problems on Planar Rarefaction Waves for Hyperbolic Conservation Laws, PhD thesis, City University of Hong Kong, Oct. 2009.
ZHANG, Mei	Some Problems on Conservation Laws and Vlasov-Poisson-Boltzmann Equation, PhD thesis, City University of Hong Kong, Oct. 2009.
LIN, Shiyou	Some Research about the Regularity of the Solutions for Spatially Homogeneous Boltzmann Equation without Angular Cutoff, PhD thesis, City University of Hong Kong, July 2010.
TIAN, Qianzhu	Some Mathematical Theories on the Boundary Layer Problem for the Boltzmann Equation with Mixed Boundary Conditions, PhD thesis, City University of Hong Kong, July 2010.
JIANG, Zaihong	Some Mathematical Studies on General Systems of Hyperbolic

	Conservation Laws, PhD thesis, City University of Hong Kong, Oct. 2010.
MA, Hongfang	Solutions Behavior of Some Dissipative Systems, PhD thesis, City University of Hong Kong, Oct. 2010.
SUN, Jie	Some Mathematical Theories on the Cauchy Problem and Boundary Layer Problem for the Boltzmann Equation, PhD thesis, City University of Hong Kong, July 2011.
WANG, Lusheng	Stability of the Stationary Solution to Vlasov-Poisson-Boltzmann System with Hard Potential, PhD thesis, City University of Hong Kong, Feb. 2012.
WANG, Ying	Some Existence and Stability Problems of the Boltzmann Equations, PhD thesis, City University of Hong Kong, July 2012.
CHENG, Chi Honn	Some Mathematical Theories on the Vlasov-Maxwell-Boltzmann System, PhD thesis, City University of Hong Kong, Oct. 2012.
JIA, Xuanji	Some Mathematical Studies on the 3D Incompressible MHD System and the Boltzmann Equation, Sept. 2016.
Huang, Yongting	Some Mathematical Theories of Kinetic Related Models.
Tang, Hao	Some Research on Stochastic Transport Type Equations and Distribution Dependent Backward Stochastic Differential Equations.
Dingqun Deng	Dissipation and semigroup on weighted Sobolev space: Linearized Boltzmann operator.
Kunlun Qi	Research on the kinetic type equations with relevant numerical method.