

Shiwu Yang

CONTACT

INFORMATION

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EMPLOYMENT

- 2022-, Associate Professor, Peking University;
- 2016-2022, Assistant Professor, Peking University;
- 2013-2016, Senior Research Associate, University of Cambridge.

EDUCATION

BACKGROUND

- Ph.D. in Mathematics, Princeton University, 2013;
Thesis Advisor: [Igor Rodnianski](#),
- B.S. in Mathematics, Peking University, 2008.

RESEARCH

INTERESTS

Analysis, Partial Differential Equations, General Relativity.

PUBLICATIONS

AND PREPRINTS

1. Shuang Miao and Pin Yu and Shiwu Yang , [On the motion of charged particles in constant electromagnetic field: the parallel case](#), arXiv:2503.23799.
2. He Mei and Dongyi Wei and Shiwu Yang, [Asymptotic decay for defocusing semilinear wave equations on Schwarzschild spacetimes](#), arXiv:2306.10667.
3. Dongyi Wei and Shiwu Yang, [Asymptotic decay for the Chern-Simons-Higgs equations](#), **Sci.China Math.** 68 (2025), no. 5.
4. Wei Dai and He Mei and Dongyi Wei and Shiwu Yang, [The Maxwell-Klein-Gordon equation with scattering data](#) , **Adv.Math.**, 471(2025).
5. Wei Dai and Shiwu Yang, [Characteristic initial value problem for nonlinear wave equation with singular initial data](#), **Calc.Var.Partial Differential Equations**, 64 (2025), no. 2.
6. Dongyi Wei and Shiwu Yang and Pin Yu, [On the global dynamics of Yang-Mills-Higgs equations](#), **Comm. Math. Phys.**, 405 (2024), no. 1.
7. Dongyi Wei and Shiwu Yang, [On the defocusing semilinear wave equations in three space dimension with small power](#), **IMRN**, 2022, no. 24.
8. Shiwu Yang, [Pointwise decay for semilinear wave equations in \$\mathbb{R}^{1+3}\$](#) , **Journal of Functional Analysis**, 283 (2022), no. 2.
9. Shiwu Yang, [Global behaviors of defocusing semilinear wave equations](#), **Ann. Sci.Éc. Norm. Supér. (4)**, 55 (2022), no. 2, 405-428.
10. Dongyi Wei and Shiwu Yang, [On the global behaviors for defocusing semilinear wave equations in \$\mathbb{R}^{1+2}\$](#) , **Analysis&PDE**, 15 (2022), no. 1, 245-272.

11. Dongyi Wei and Shiwu Yang, [On the 3D Relativistic Vlasov-Maxwell System with large Maxwell field](#), **Comm. Math. Phys.**, 383 (2021), no. 3, 2275-2307.
12. Dongyi Wei and Shiwu Yang, [Asymptotic decay for defocusing semilinear wave equations in \$\mathbb{R}^{1+1}\$](#) , **Ann. PDE**, 7 (2021), no. 1, 9.
13. Allen Fang, [Qian Wang](#) and Shiwu Yang, [Global solution for Massive Maxwell-Klein-Gordon equations with large Maxwell field](#), **Ann. PDE**, 7 (2021), no. 1, 3.
14. Sergiu Klainerman, [Qian Wang](#) and Shiwu Yang, [Global solution for massive Maxwell-Klein-Gordon equations](#), **Comm. Pure Appl. Math**, 73(2020), no.1, 63-109.
15. Shiwu Yang and [Pin Yu](#), [On global dynamics of the Maxwell-Klein-Gordon equations](#), **Camb.J.Math**, 7(2019), no.4, 365-467.
16. Jonathan Luk, [Sung-Jin Oh](#) and Shiwu Yang, [Dynamical black holes with prescribed masses in spherical symmetry](#), *Proceedings of the Seventh International Congress of Chinese Mathematicians*, Vol. II, 367-387, **Adv. Lect.Math**, 44(2019).
17. [Garving Luli](#), Shiwu Yang and [Pin Yu](#), [On one-dimension semi-linear wave equations with null conditions](#), **Adv. Math.**, 329(2018), 174-188.
18. Jonathan Luk, [Sung-Jin Oh](#) and Shiwu Yang, [Solutions to the Einstein-scalar-field system in spherical symmetry with large bounded variation norms](#), **Ann. PDE**, 4(2018), no.1.
19. Shiwu Yang, [On global behavior of solutions of the Maxwell-Klein-Gordon equations](#), **Adv. Math.**, 326(2018), 495-520.
20. Shiwu Yang, [Decay of solutions of Maxwell-Klein-Gordon equations with large Maxwell field](#), **Anal. PDE**, 9 (2016), no.8, 1829-1902.
21. Shiwu Yang, [On the quasilinear wave equations in time dependent inhomogeneous media](#), **J. Hyperbolic Differ. Equ.**, 13 (2016), no. 2, 273-330.
22. Shiwu Yang, [Global solutions of nonlinear wave equations with large energy](#), **Selecta Math. (N.S.)**, 21 (2015), no. 4, 1405-1427.
23. Shiwu Yang, [Global stability of solutions to nonlinear wave equations](#), **Selecta Math. (N.S.)**, 21 (2015), no. 3, 833-881.
24. Shiwu Yang, [On the geodesic hypothesis in general relativity](#), **Comm. Math. Phys.**, 325 (2014), no. 3, 997-1062.
25. Shiwu Yang, [Global solutions of nonlinear wave equations in time dependent inhomogeneous media](#), **Arch. Rational Mech. Anal.**, 209 (2013), no. 2, 683-728.

TEACHING

- Fall 2025, *Calculus III*, Peking University.
- Spring 2025, *Calculus II*, Peking University.
- Fall 2024, *Calculus I*, Peking University.
- Spring 2024, *Introduction to Analysis and PDE*, Peking University
- Fall 2023, *Calculus III*, Peking University
- Spring 2023, *Calculus II*, Peking University
- Fall 2022, *Calculus I*, Peking University.

- Spring 2022, *Hyperbolic Partial Differential Equations*, Peking University.
- Fall 2021, *Functions of Real variables*, Peking University.
- Spring 2021, *Hyperbolic Partial Differential Equations*, Peking University.
- Fall 2020, *Functions of Real variables*, Peking University.
- Spring 2020, *Hyperbolic Partial Differential Equations*, Peking University.
- Fall 2019, *Functions of Real variables*, Peking University.
- Spring 2019, *Hyperbolic Partial Differential Equations*, Peking University.
- Fall 2018, *Calculus C*, Peking University.
- Spring 2018, *Partial Differential Equations*, Peking University.
- Fall 2017, *Calculus III*, Peking University.
- Spring 2017, *Advanced Calculus*, Peking University.

HONORS AND
AWARDS

- 2020 Alibaba Damo Young Fellow.
- Gold Medal in 45th International Mathematical Olympiad, Athens, Greece, 2004.
- Mingde Fellowship, Peking University, 2004-2008.