

周双勇教授

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研究方向 量子场论、引力、宇宙学和粒子物理
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个人经历

2012 PhD, University of Nottingham, UK
2012--2014 Postdoctoral Research Fellow, SISSA, Italy
2014--2016 Postdoctoral Scholar, Case Western Reserve University, USA
2016--2017 Research Associate, Imperial College London, UK
2017--至今 中国科学技术大学教授

学术研究

主要研究领域：

从事量子场论、引力、宇宙学及粒子物理等方面（特别是交叉方向）的研究。已在国际一流物理期刊发表论文 50 余篇，其中 1 篇为 Reviews of Modern Physics 邀请综述，1 篇 PRL 被其编辑部选为 Editors' Suggestion；论文共已被引用 3000 余次，其中有 12 篇引用超过 100 次。2017 年入选国家创新人才青年项目。2018 年起受邀担任荷兰 Elsevier 旗下杂志 Results in Physics (2021IF: 4.565) 的编委。2022年，受邀为美国物理学会撰写白皮书《紫外对红外物理的约束》，旨在为未来10年相关领域的发展提供借鉴。受邀担任 Physics Reports、PRL、JHEP、PRD、PLB、JCAP、SciPost、CGQ、CPC等 10 余种国际主流物理期刊审稿人。

近期研究兴趣：

1. 量子场论和 S-矩阵 bootstrap
2. 粒子物理与引力中的有效场论
3. 非拓扑孤立子、早期宇宙相变，黑洞及引力波

近期代表论文:

- Causality bounds on scalar-tensor EFTs, Dong-Yu Hong, Zhuo-Hui Wang, Shuang-Yong Zhou, ArXiv: 2304.01259 [hep-th].
- Q-ball Superradiance, Paul M. Saffin, Qi-Xin Xie, Shuang-Yong Zhou, arXiv: 2212.03269 [hep-th].
- Snowmass White Paper: UV Constraints on IR Physics, Claudia de Rham, Sandipan Kundu, Matthew Reece, Andrew J. Tolley, Shuang-Yong Zhou, arXiv: 2203.06805 [hep-th].
- Triple crossing positivity bounds for multi-field theories, Zong-Zhe Du, Cen Zhang, Shuang-Yong Zhou, JHEP 12 (2021) 115; arXiv: 2111.01169 [hep-th].
- Positivity in Multifield Effective Field Theories, Xu Li, Hao Xu, Chengjie Yang, Cen Zhang, Shuang-Yong Zhou, Phys.Rev.Lett. 127 (2021) 12, 121601; arXiv: 2101.01191 [hep-ph].
- Gravitational collapse of quantum fields and Choptuik scaling, Benjamin Berczi, Paul M. Saffin, Shuang-Yong Zhou, JHEP 02 (2022) 183; arXiv: 2111.11400 [hep-th].
- New positivity bounds from full crossing symmetry, Andrew J. Tolley, Zi-Yue Wang, Shuang-Yong Zhou, JHEP 05 (2021) 255; arXiv: 2011.02400 [hep-th].
- A convex geometry perspective to the (SM)EFT space, Cen Zhang, Shuang-Yong Zhou, Phys.Rev.Lett. 125 (2020) 20, 201601; arXiv: 2005.03047 [hep-ph].
- Oscillon Preheating in Full General Relativity, Xiao-Xiao Kou, Chi Tian, Shuang-Yong Zhou, Class.Quant. Grav. 38 (2021) 4, 045005; arXiv: 1912.09658 [gr-qc].
- Positivity bounds on vector boson scattering at the LHC, Cen Zhang, Shuang-Yong Zhou, Phys.Rev.D100 (2019) 095003; arXiv: 1808.00010 [hep-ph].
- Can the graviton have a large mass near black holes? Jun Zhang, Shuang-Yong Zhou, Phys.Rev.D97 (2018) 081501(Rapid Communication); arXiv: 1709.07503 [gr-qc].
- UV complete me: Positivity Bounds for Particles with Spin, Claudia de Rham, Scott Melville, Andrew J. Tolley, Shuang-Yong Zhou, JHEP 1803 (2018) 011; arXiv: 1706.02712 [hep-th].
- Graviton Mass Bounds, Claudia de Rham, J. Tate Deskins, Andrew J. Tolley, Shuang-Yong Zhou, Rev.Mod.Phys. 89 (2017), 025004 (*Review Article*); arXiv: 1606.08462 [astro-ph.CO].
- The Λ_2 limit of massive gravity, Claudia de Rham, Andrew J. Tolley, Shuang-Yong Zhou, JHEP 1604 (2016) 188; arXiv: 1602.03721 [hep-th].
- Charge-Swapping Q-balls, Edmund J. Copeland, Paul M. Saffin, Shuang-Yong Zhou, Phys.Rev.Lett. 113 (2014), 231603 (*Editors' Suggestion*); arXiv: 1409.3232 [hep-th].
- Black hole hair in generalized scalar-tensor gravity, Thomas P. Sotiriou, Shuang-Yong Zhou, Phys.Rev.Lett. 112 (2014) 251102, arXiv: 1312.3622 [gr-qc].
- Mass-Varying Massive Gravity, Qing-Guo Huang, Yun-Song Piao, Shuang-Yong Zhou, Phys.Rev. D86 (2012) 124014; arXiv: 1206.5678 [hep-th].

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