Diandian Wang

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Education

09/2023 - Present	**Harvard University** Postdoctoral research fellow (High Energy Theory) Research advisor: Andrew Strominger	Boston, USA
09/2018 - 08/2023	**University of California, Santa Barbara** PhD (High Energy Theory) Research advisor: Gary Horowitz	Santa Barbara, USA
09/2017 - 06/2018	**Trinity College & DAMTP, Cambridge University** MMath (Part III Maths) Degree class: Distinction (GPA-equivalent: 4.0/4.0)	Cambridge, UK
09/2014 - 06/2017	**Trinity College, Cambridge University** BA (Natural Sciences) Degree class: First (GPA-equivalent: 4.0/4.0)	Cambridge, UK

Publications

[1] **Diandian Wang** and Zi-Yue Wang. "Higher-spin localized shocks". In: (Sept. 2024). arXiv: 2409.19785 [hep-th].

[2] Gary T. Horowitz, **Diandian Wang**, and Xiaohua Ye. "New energy inequality in AdS spacetimes". In: *Phys. Rev. D* 110.6 (2024), p. 064015. DOI: 10.1103/PhysRevD.110.064015. arXiv: 2406.13068 [gr-qc].

[3] Sirui Ning, **Diandian Wang**, and Zi-Yue Wang. "Pole skipping in holographic theories with gauge and fermionic fields". In: *JHEP* 12 (2023), p. 084. DOI: 10.1007/JHEP12(2023)084. arXiv: 2308.08191 [hep-th].

[4] Xi Dong, Grant N. Remmen, **Diandian Wang**, Wayne W. Weng, and Chih-Hung Wu. "Holographic entanglement from the UV to the IR". In: *JHEP* 11 (2023), p. 207. DOI: 10.1007/JHEP11(2023)207. arXiv: 2308.07952 [hep-th].

[5] Lecheng Ren, Anders Schreiber, Atul Sharma, and **Diandian Wang**. "All-order celestial OPE from on-shell recursion". In: *JHEP* 10 (2023), p. 080. DOI: 10.1007/JHEP10(2023)080. arXiv: 2305.11851 [hep-th].

[6] **Diandian Wang** and Zi-Yue Wang. "Pole Skipping in Holographic Theories with Bosonic Fields". In: *Phys. Rev. Lett.* 129.23 (2022), p. 231603. DOI: 10.1103/PhysRevLett.129.231603. arXiv: 2208.01047 [hep-th].

[7] Gary T. Horowitz, **Diandian Wang**, and Xiaohua Ye. "An infinity of black holes". In: *Class. Quant. Grav.* 39.22 (2022), p. 225014. DOI: 10.1088/1361-6382/ac994b. arXiv: 2206.08944 [hep-th].

[8] Xi Dong, **Diandian Wang**, Wayne W. Weng, and Chih-Hung Wu. "A Tale of Two Butterflies: An Exact Equivalence in Higher-Derivative Gravity". In: *JHEP* 10 (2022), p. 009. DOI: 10.1007/JHEP10(2022)009. arXiv: 2203.06189 [hep-th].

[9] Sergio Hernández-Cuenca, Gary T. Horowitz, Gabriel Treviño, and **Diandian Wang**. "Boundary Causality Violating Metrics in Holography". In: *Phys. Rev. Lett.* 127.8 (2021), p. 8. DOI: 10.1103/PhysRevLett.127.081603. arXiv: 2103.05014 [hep-th].

[10] Stephen Ebert, Atul Sharma, and **Diandian Wang**. "Descendants in celestial CFT and emergent multi-collinear factorization". In: *JHEP* 03 (2021), p. 030. DOI: 10.1007/JHEP03(2021)030. arXiv: 2009.07881 [hep-th].

[11] Gary T. Horowitz and **Diandian Wang**. "Consequences of Analytic Boundary Conditions in AdS". In: *JHEP* 04 (2020), p. 045. DOI: 10.1007/JHEP04(2020)045. arXiv: 2002.10609 [gr-qc].

[12] Gary T. Horowitz and **Diandian Wang**. "Gravitational Corner Conditions in Holography". In: *JHEP* 01 (2020), p. 155. DOI: 10.1007/JHEP01(2020)155. arXiv: 1909.11703 [hep-th].

[13] Ulrich Sperhake, William Cook, and **Diandian Wang**. "High-energy collision of black holes in higher dimensions". In: *Phys. Rev. D* 100.10 (2019), p. 104046. DOI: 10.1103/PhysRevD.100.104046. arXiv: 1909.02997 [gr-qc].

[14] Gary T. Horowitz, Don Marolf, Jorge E. Santos, and **Diandian Wang**. "Creating a Traversable Wormhole". In: *Class. Quant. Grav.* 36.20 (2019), p. 205011. DOI: 10.1088/1361-6382/ab436f. arXiv: 1904.02187 [hep-th].

[15] William G. Cook, **Diandian Wang**, and Ulrich Sperhake. "Orbiting black-hole binaries and apparent horizons in higher dimensions". In: *Class. Quant. Grav.* 35.23 (2018), p. 235008. DOI: 10.1088/1361-6382/aae995. arXiv: 1808.05834 [gr-qc].

[16] Philip Brown, Konstantin Semeniuk, **Diandian Wang**, Bartomeu Monserrat, Chris J. Pickard, and F. Malte Grosche. "Strong coupling superconductivity in a quasiperiodic host-guest structure". In: *Science Advances* 4.4 (2018), eaao4793. DOI: 10.1126/sciadv.aao4793. URL: https://www.science.org/doi/abs/10.1126/sciadv.aao4793.

Awards

- Trinity College Examination Prize (each year for 4 years) [2014-2018]
- Elected Senior Scholar of Trinity College, Cambridge [2016]
- Elected Junior Scholar of Trinity College, Cambridge [2015]
- Grand Master of Memory (International Association of Memory) [2011]

Talks given

- General Relativity Seminar, CMSA, Harvard [09/2024]
- Quantum Gravity Seminar Series, Brandeis [11/2023]
- Celestial Kickoff Workshop, Harvard [10/2023]
- General Relativity Seminar, CMSA, Harvard [09/2023]
- High Energy Seminar, Kavli Institute of Theoretical Physics (KITP) [10/2022]
- Fundamental Aspects of Gravity Conference, Imperial College London [08/2022]
- High Energy Seminar, Beijing Normal University [11/2021]
- TASI, University of Colorado Boulder [06/2021]
- Oxford String Theory Journal Club, University of Oxford [05/2021]

- High Energy Seminar, Kavli Institute of Theoretical Sciences (KITS) [04/2021]
- Pacific Coast Gravity Meeting, University of Arizona [03/2021]
- South California String Seminar, UCLA [02/2020]
- South California String Seminar, CalTech [05/2019]
- Pacific Coast Gravity Meeting, University of Utah [03/2019]

Press

- Featured in The Companion, Becca Caddy [05/2022]
  - "*The Science of Wormholes, Portals, and the Guardian of Forever*"
- Mentioned in Live Science, Paul Sutter [11/2021]
- Featured in New Scientist, Chelsea Whyte [10/2019]
  - "*Quantum weirdness could allow a person-sized wormhole to last forever*"
- Mentioned in Space.com, Mara Johnson-Groh [08/2019]