curriculum vitæ of
Jacob Bringewatt
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Education

2018 – present **Ph.D.** in physics — University of Maryland, College Park

I'm a 3rd year PhD student, DOE Computational Science Graduate Fellow (2018-2022), and QuICS Lanczos Graduate Fellow (2018-2020) in theoretical physics. I'm also affiliated with the Joint Quantum Institute (JQI) and the Joint Center for Quantum Information and Computer Science (QuICS). My advisor is Alexey Gorshkov.

2014 – 2018 **B.S.** in physics (cum laude with high honors in physics) — University of Maryland, College Park

Banneker Key Scholar
Honors thesis title: "Diffusion Monte Carlo approach versus adiabatic computation for local Hamiltonians".

Publications

Authors who equally contributed to a publication are marked with a †.

1. T Qian†, **J Bringewatt**†, I Boettcher, P Bienias, A V Gorshkov. "Optimal measurement of field properties with quantum sensor networks." Preprint. (2020) [arXiv:2011.01259]
2. **J Bringewatt**, N Sato , W Melnitchouk, J Qiu, F Steffens, M Constantinou. "Confronting lattice parton distributions with global QCD analysis." Preprint. (2020) [arXiv:2010.00548]
3. **J Bringewatt**†, M Jarret†. "Effective gaps are not effective: quasipolynomial classical simulation of obstructed stoquastic Hamiltonians." Phys. Rev. Lett. 125, 170504 (2020), [arXiv:2004.08681]
4. **J Bringewatt**, W Dorland, SP Jordan. "Polynomial time algorithms for estimating spectra of adiabatic Hamiltonians." Phys. Rev. A 100 (3), 032336 (2019), [arXiv:1905.07461]. Editors' Suggestion.
5. **J Bringewatt**, W Dorland, SP Jordan, A Mink. "Diffusion Monte Carlo approach versus adiabatic computation for local Hamiltonians." Phys. Rev. A 97 (2), 022323 (2018), [arXiv:1709.03971]
6. K Pushkin, C Akerlof, D Anbajagane, J Armstrong, M Arthurs, **J Bringewatt**, T Edberg, C Hall, M Lei, R Raymond, M Reh, D Saini, A Sander, J Schaefer, D Seymour, N Swanson, Y Wang, W Lorenzon. "Study of radon reduction in gases for rare event search experiments." Nucl. Instrum. Methods Phys. Res., Sect. A 903, 267-276 (2018), [arXiv:1805.11306]

Talks and Posters

- "Lattice data in the JAM framework." Talk as Amherst Center for Fundamental Interactions (ACFI) Workshop on QCD Real-Time Dynamics and Inverse Problems (Oct. 2020)
- "Confronting lattice parton densities with global analysis." Talks at Jefferson Lab weekly seminar (Aug. 2019) and at DNP 2019 (Oct. 2019) and AI for Nuclear Physics Workshop - Bayesian Inference for Quantum Correlation Functions Working Group (Mar. 2020)
- "Estimating multiple functions with quantum sensor networks." Poster at QuICS 5-year Anniversary Symposium (Jan. 2020)
- "Effective gaps are not effective." Poster at FAR-QC kickoff meeting (Nov. 2019)
- "Polynomial time algorithms for estimating spectra of adiabatic Hamiltonians." Poster at STAQ kickoff meeting, Duke University (Nov. 2018) and QIP2019 (Jan. 2019) and at DOE Computational Science Graduate Fellowship Annual Program Review (July 2019)

- "Diffusion monte carlo approach versus adiabatic computation for local Hamiltonians." Poster at QIP2018 (Jan. 2018) and at DOE Computational Science Graduate Fellowship Annual Program Review (July 2018) and talk at NIST SURF program final review and for undergraduate honors thesis defense (May 2018)

Honors

2018-2022 DOE Computational Science Graduate Fellow — Department of Energy

2018-2020 QuICS Lanczos Graduate Fellow. Joint Center for Quantum Information and Computer Science

2019 DOE Computational Science Graduate Fellowsip Communicate Your Science Essay Contest Winner. — Krell Institute

2014-2018 Banneker Key Scholar. — University of Maryland, College Park

Service To The Scientific Community

2020-2021 Speaker Organizer for QuICS-JQI-CMTC Friday Seminar

Organized speakers and ran seminar.

Teaching and Mentorship

Summer 2020 Research Mentor — UMD

Mentored a high school student, Timothy Qian, on a summer research project, leading to a publication.

Fall 2016- Spring 2018 Math Tutor — UMD

Fall 2016-Spring 2018 Peer Mentor — University Honors Program at UMD

Fall 2016 Teaching Assistant — Philosophy of Quantum Mechanics