Justin Finkel

Ph.D. Candidate

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Education

University of Chicago, Ph.D. in Computational and Applied Mathematics, expected June 2022.
Thesis topic: Atmospheric extremes through the lens of transition path theory
Advisor: Jonathan Weare (NYU)
Co-advisors: Mary Silber (UChicago), Dorian Abbot (UChicago), Edwin Gerber (NYU)

Washington University in Saint Louis, B.A. in Mathematics and Physics, *Magna Cum Laude*, May 2017.
Thesis Project: Changing World Temperature Statistics
Thesis Advisor: Jonathan Katz

Awards

- Department of Energy Computational Sciences Graduate Fellowship (DOE CSGF), 2018-2022
- Nishi Luthra award for "Outstanding students in the Physics department and the Philosophy department", 2017
- *Sigma Pi Sigma* inductee (physics honor society), 2017
- Academic Mentor of the Year (for physics mentoring), 2014-2015

Publications

In review

1.

In press

1. **Justin Finkel**, Robert J. Webber, Dorian S. Abbot, Edwin P. Gerber, and Jonathan Weare. Learning forecasts of rare stratospheric transitions from short simulations, 2021. https://arxiv.org/abs/2102.07760,

Published

1. **Justin Finkel**, Dorian S. Abbot, and Jonathan Weare. Path properties of atmospheric transitions: Illustration with a low-order sudden stratospheric warming model. *Journal of the Atmospheric Sciences*, 77(7):2327 – 2347, 2020

2. Predrag Popović, **Finkel, Justin**, Mary C. Silber, and Dorian S. Abbot. Snow topography on undeformed arctic sea ice captured by an idealized "snow dune" model. *Journal of Geophysical Research: Oceans*, 125(9):e2019JC016034, 2020. e2019JC016034 10.1029/2019JC016034

3. **Finkel, J. M.** and Jonathan I. Katz. Changing world extreme temperature statistics. *International Journal of Climatology*, 38(5):2613–2617, 2018

4. **Finkel, J. M.** and J. I. Katz. Changing us extreme temperature statistics. *International Journal of Climatology*, 37(13):4749–4755, 2017

5. C.D. Kreisch, J.A. O'Sullivan, R.E. Arvidson, D.V. Politte, L. He, N.T. Stein, **J. Finkel**, E.A. Guinness, M.J. Wolff, and M.G.A. Lapôtre. Regularization of mars reconnaissance orbiter crism along-track oversampled hyperspectral imaging observations of mars. *Icarus*, 282:136–151, 2017

6. **Finkel, J. M.**, L. M. Canel-Katz, and J. I. Katz. Decreasing us aridity in a warming climate. *International Journal of Climatology*, 36(3):1560–1564, 2016

Teaching and mentorship

1. Supervising undergraduate research project by James Butler (UChicago): exploring stochastic stability and transition path statistics of a low-order atmospheric blocking model.

2. Supervised a master's thesis by Matthew Shin (UChicago): "Towards time-dependent transition path theory: numerical study of periodically forced dynamics."

3. Taught a short virtual linear algebra course to 10 beginning chemistry Ph.D. students (UChicago), September 2020.

4. Online tutoring in mathematics, physics, and computer science with Varsity Tutors.

Presentations

1. University of Bristol Climate Dynamics seminar. Joint with Dorian Abbot. May 26, 2021

2. European Geophysical Union General Assembly, 2021. Contributed talk. April 28, 2021

3. SIAM conference on dynamical systems, 2021. Contributed talk. May 23, 2021

4. American Physical Society March Meeting, 2021. Contributed talk. March 18, 2021

5. Courant Institute of Mathematical Sciences student seminar, 2021. March 12, 2021

6. SIAM conference on dynamical systems, 2019. Poster. May 22, 2019

7. American Geophysical Union Fall Meeting, 2018. Contributed talk. December 10, 2018

8. Midstates Consortium for Math and Science, Nov. 5, 2016. Poster. November 5, 2016

9. Washington University Undergraduate Research Symposium. October 2014. Poster.