Thomas DeWitt

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Salt Lake City, Utah

EDUCATION

University of Utah *Salt Lake City, UT*

Ph.D., Atmospheric Science, *Expected 2026*

M.S., Atmospheric Science, *2023*

- Passed Comprehensive Examination with Distinction

Weber State University *Ogden, UT*

B.S., Physics, *2020*

- Cum Laude
- Minor in Mathematics
- GPA: 3.72

A.S., Mathematics, *2019*

- Honors
- GPA: 3.73

PUBLICATIONS

DeWitt, T. D.; Garrett, T. J.. Realistic non-hydrodynamic simulation of cloud fields using the Bloblike Eddy Atmospheric Model (BEAM). *In Prep.,* 2025.

DeWitt, T. D.; Garrett, T. J.. Global sonde datasets do not support a mesoscale transition in the dynamic energy cascade. Submitted to: *Journal of Atmospheric Sciences,* 2025. Preprint link.

DeWitt, T. D.; Garrett, T. J.; Rees, K. N.. Toward less subjective metrics for quantifying the shape and organization of clouds. Submitted to: *Atmospheric Chemistry and Physics,* 2025. Preprint link.

Garrett, T. J.; Bois, C.; **DeWitt, T. D.**; Rees, K. N.. Cloud edge energy adjusts to the saturated tropospheric mean independent of climate state. *Geophysical Research Letters,* 2025. Link.

Rees, K. N.; Garrett, T. J.; **DeWitt, T. D.**; Bois, C.; Krueger, S. K.; Riedi, J. C.. A global analysis of the fractal properties of clouds revealing anisotropy of turbulence across scales. **Highlight paper**. *Nonlinear Processes in Geophysics,* 2024. Link.

DeWitt, T. D.; Garrett, T. J.. Finite domains cause bias in measured and modeled distributions of cloud sizes. *Atmospheric Chemistry and Physics,* 2024. Link.

DeWitt, T. D.; Garrett, T. J.; Rees, K. N.; Bois, C.; Krueger, S. K.; Ferlay, N.. Climatologically invariant scale invariance seen in distributions of cloud horizontal sizes. **Highlight paper**. *Atmospheric Chemistry and Physics,* 2024. Link.

SOFTWARE

DeWitt, Thomas. `scaleinvariance`: Simulation and analysis of scale invariant processes and multifractal fields. *Python,* 2025. Link.

DeWitt, Thomas. `cloudyview`: Cloud field visualization using physically realistic radiative transfer. *Python,* 2025. Link.

DeWitt, Thomas. `objscale`: Object-based analysis functions for fractal dimensions and size distributions.

Python, 2025. Link. DOI.

PRESENTATIONS

2025 **Scale Invariance of Cloud Size Spectra to Near Planetary Scales** *Poster*
Living Planet Symposium, *Vienna, Austria*

2025 **Dynamics: Nothing but Turbulence?** *Invited Talk*
University of Utah, *SLC, Utah*

2023 **Revisiting the limits of scale invariance in cloud horizontal sizes** *Invited Talk*
Gordon Conference: Radiation and Climate, *Lewiston, ME*

2023 **Does total cloud perimeter control total cloud area?** *Poster*
Gordon Conference: Radiation and Climate, *Lewiston, ME*

2022 **The Ensemble Fractal Dimension of clouds** *Poster*
AGU Fall Meeting, *Chicago, IL*

2022 **Disagreement in observed and simulated cloud perimeter distributions** *Poster*
Pan-GASS Meeting, *Monterey, CA*

2022 **Linear scaling of cloud sizes ranging from the turbulent microscale to the planetary scale** *Poster*
Pan-GASS Meeting, *Monterey, CA*

2022 **Thermodynamic constraints on cloud geometry** *Invited talk*
University of Lille, *Lille, France*

2020 **Analyzing the influence of traffic on the urban heat island** *Poster*
AGU Fall Meeting, *Virtual*

SERVICE

Substack science blog "Thought Cloud" (Link) 2025
Thought Cloud explains frontier atmospheric science research to a public audience.

Journal reviewer 2023-2025
Atmospheric Chemistry and Physics (2), Journal of Geophysical Research - Atmospheres (1)

Graduate Student Advisory Committee (GSAC) Founder 2023-2025
I founded the first GSAC in our department and lead our first-year peer mentoring program.

Science with You: High School Liaison (Link) Sept-Jan 2022-2023
I organized and coordinated mentoring relationships between 18+ high-school students.

Letters to a Pre-Scientist (LPS) (Link) 2023-2024

STEM Community Alliance Program (Link) Feb 2023

TEACHING EXPERIENCE

Graduate Teaching Contributor, *Aug 2022 - Dec 2024*
University of Utah, Department of Atmospheric Science

- Design and present a total of 9 lectures, grade assignments, create assignment questions, develop demonstrations
- Classes: Physical Meteorology (graduate), Dynamic Meteorology (graduate), Physical Meteorology (undergraduate)

Math and Physics Tutor, *Feb 2020 - Dec 2020*
Weber State University, Student Support Services

- Tutor students in classes including MATH 950, MATH 1050, MATH 1210 (calculus I), PHYS 2210 (intro physics I)
- Facilitate switch to virtual tutoring during COVID-19 restrictions
- College Reading and Learning Association Certified Advanced Tutor

HONORS/AWARDS

Norihiko Fukuta Memorial Award 2024
Outstanding Graduate Student Publication ($1500)

Weber State Student Sustainability Research Award 2021
Exceptional Sustainability Research Project ($500)

Colorado State ESMEI Program REU 2020
Program cancelled due to COVID-19

Aletheia Presidential Scholarship 2016 - 2020
Full tuition and fees for 8 semesters plus 9th semester extension

Dominion Energy Charitable Foundation Physics Scholarship 2019 - 2020, 2020-2021

College of Science Scholarship 2020

Dean's List 2020, 2017