

# DANIEL J. LLOVERAS

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## RESEARCH INTERESTS

Atmospheric predictability; synoptic and mesoscale meteorology; numerical modeling

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## EDUCATION

**Ph.D. in Atmospheric Sciences**, University of Washington Expected December 2023

**M.S. in Atmospheric Sciences**, University of Washington March 2021

**B.S. in Marine and Atmospheric Science**, University of Miami, *summa cum laude* May 2018  
Majors in meteorology and applied mathematics, minor in broadcast journalism

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## RESEARCH POSITIONS

**Graduate Research Assistant**, University of Washington 2018 - Present

Advisor: Prof. Dale Durran

Investigating the important physical processes and spatial scales for error growth in midlatitude cyclones using the Weather Research and Forecasting (WRF) model

**Undergraduate Research Assistant**, University of Miami 2016 - 2018

Advisors: Prof. Paquita Zuidema and Prof. Cassandra Gaston

Analyzed data from the Layered Atlantic Smoke Interactions with Clouds (LASIC) field campaign to examine changes to low-cloud properties in the presence of shortwave-absorbing smoke

**Research Intern**, Geophysical Fluid Dynamics Laboratory Summer 2017

Advisor: Dr. Xiaosong Yang

Used the Forecast-Oriented Low Ocean Resolution (FLOR) model to understand how the seasonal predictability of precipitation in the southeastern United States depends on the representation of sea surface temperature patterns in the North Atlantic

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## PUBLICATIONS

**Lloveras, D. J.** and D. R. Durran, 2023: Improving the realism of idealized moist baroclinic-wave channel simulations. *Mon. Wea. Rev.*, submitted.

**Lloveras, D. J.**, D. R. Durran, and J. D. Doyle, 2023: The two- to four-day predictability of midlatitude cyclones: Don't sweat the small stuff. *J. Atmos. Sci.*, **80**, 2613–2633. <https://doi.org/10.1175/JAS-D-22-0232.1>

**Lloveras, D. J.**, L. H. Tierney, and D. R. Durran, 2022: Mesoscale predictability in moist midlatitude cyclones is not sensitive to the slope of the background kinetic energy spectrum. *J. Atmos. Sci.*, **79**, 119–139. <https://doi.org/10.1175/JAS-D-21-0147.1>

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## PRESENTATIONS

**Lloveras, D. J.**, D. R. Durran, and J. D. Doyle, 2023: Initial-condition-error growth in idealized midlatitude cyclones. *20th American Meteorological Society (AMS) Conference on Mesoscale Processes*. Oral presentation.

**Lloveras, D. J.**, D. R. Durran, and J. D. Doyle, 2023: Upscale versus large-scale error growth in midlatitude cyclones. *3rd Symposium on Mesoscale Processes at the 103rd AMS Annual Meeting*. Oral presentation.

**Lloveras, D. J.**, D. R. Durran, L. H. Tierney, and J. D. Doyle, 2022: The predictability of midlatitude cyclones: Are butterflies important? *National Center for Atmospheric Research–Mesoscale and Microscale Meteorology Laboratory (NCAR–MMM) Happy Hour Seminar*. Invited oral presentation.

**Lloveras, D. J.**, L. H. Tierney, and D. R. Durran, 2022: Mesoscale predictability in moist midlatitude cyclones is not sensitive to the slope of the background kinetic energy spectrum. *19th Conference on Mesoscale Processes at the 102nd AMS Annual Meeting*. Remote oral presentation.

**Lloveras, D. J.**, L. H. Tierney, and D. R. Durran, 2021: Mesoscale predictability in moist midlatitude cyclones is not sensitive to the slope of the background kinetic energy spectrum. *American Geophysical Union (AGU) Fall Meeting 2021*. Remote poster presentation.

**Lloveras, D. J.** and P. Zuidema, 2018: Assessment of low-cloud changes in the presence of shortwave-absorbing smoke. *17th Student Conference at the 98th AMS Annual Meeting*. Poster presentation.

**Lloveras, D. J.** and X. Yang, 2018: Evaluating the predictability of summertime precipitation over the southeastern United States. *17th Student Conference at the 98th AMS Annual Meeting*. Poster presentation.

## HONORS AND AWARDS

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Graduate Student Distinguished Service Award, University of Washington	2022
Honorable Mention Oral Presentation, 19th AMS Conference on Mesoscale Processes	2022
Outstanding Student Presentation Award, AGU Fall Meeting	2021
Achievement Rewards for College Scientists Fellowship	2018 - 2021
Honorable Mention, National Science Foundation Graduate Research Fellowship Program	2019
Departmental Honors in Atmospheric Science, University of Miami	2018
Outstanding Graduating Senior in Mathematics, University of Miami	2018
Honor Roll and Dean's List, University of Miami	2014 - 2018
President's Scholarship, University of Miami	2014 - 2018

## SERVICE AND OUTREACH

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<b>Student Member</b> , AMS Committee on Weather Analysis and Forecasting Plan conferences and chair sessions Evaluate AMS glossary submissions and award nominees Co-author 5-year strategic and implementation plans	2020 - Present
<b>Mentor</b> , University of Washington Graduate-Undergraduate Mentoring Program Mentor for three undergraduates in Department of Atmospheric Sciences Meet quarterly to discuss courses and career opportunities Attend quarterly social events to engage with other undergraduates	2019 - Present
<b>Volunteer</b> , University of Washington Outreach Program Provide demos during science nights at local elementary schools Host field trips from local schools by providing demos and tours of the building	2018 - Present
<b>Manager</b> , University of Washington WxChallenge Forecasting Team Coordinated weekly weather discussions and daily email weather briefings Taught and mentored undergraduates interested in weather forecasting and analysis Recruited and registered team members in national forecasting competition	2020 - 2023

<b>Graduate President</b> , University of Washington Student Chapter of the AMS	2020 - 2022
Organized monthly social and professional development events	
Raised funds for undergraduates to attend AMS Student Conference	
Mentored undergraduate officers	
<b>Treasurer</b> , University of Miami Student Chapter of the AMS	2017 - 2018
Managed the chapter's budget	
Coordinated reimbursements	

## TEACHING EXPERIENCE

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**Instructor**, ATM S 490: Current Weather Analysis, University of Washington  
 Winter Quarter 2021, Autumn Quarter 2021, Spring Quarter 2022  
 Led weekly discussions on current weather  
 Presented lectures on fundamentals and frontiers of weather analysis  
 Taught sections for both majors and non-majors

**Teaching Assistant**, ATM S 111: Global Warming, University of Washington  
 Winter Quarter 2022, Spring Quarter 2023  
 Led weekly quiz sections to review material and facilitate discussions  
 Developed new homework and exam questions  
 Graded assignments and final projects

**Teaching Assistant**, ATM S 103: Hurricanes and Thunderstorms, University of Washington  
 Spring Quarter 2020  
 Presented weekly lectures on a "storm of the week"  
 Led exam review sessions  
 Developed new homework and exam questions  
 Adapted to the first online-learning quarter of the pandemic

## COMPUTING EXPERIENCE

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### NCAR's Weather Research and Forecasting (WRF) Model

Developed novel Python code for initializing baroclinic-wave simulations in WRF  
 Code is publicly available at <https://github.com/lloverasdan/init-bwave>  
 Gained experience with WRF at both the Namelist and FORTRAN level  
 Analyzed and visualized WRF output with NumPy, Xarray, netCDF4, and Matplotlib  
 Compiled and ran WRF on high-performance computing machines

### GFDL's Forecast-Oriented Low-Ocean Resolution (FLOR) Model

Analyzed model output with MATLAB  
 Computed verification statistics using ERA-Interim reanalysis data  
 Conducted composite analysis

### Layered Atlantic Smoke Interactions with Clouds (LASIC) Data

Analyzed data with Interactive Data Language (IDL)  
 Analyzed output from radars, lidars, and cloud-condensation nuclei counters

Last updated: 30 October 2023