



ATOC COLLOQUIUM

Welcome!

Please join us for the next ATOC Colloquium on **Friday, Oct. 10** from **11:00 AM–12:00 PM**, which will be held in **SEEC S372A/B** and **simulcast over Zoom**. This week's colloquium features Dr. Allison Wing from Department of Earth, Ocean and Atmospheric Science at Florida State University.

Organization of Tropical Convection: From Idealized Simulations to Field Observations

In this talk, I will discuss how convective organization modulates tropical climate, focusing on precipitation extremes. First I will present results from the Radiative-Convective Equilibrium Model Intercomparison Project (RCEMIP), which provides a common, idealized configuration across an ensemble of ~30 models, including models with explicit convection and those with parameterizations. By removing heterogeneities in boundary conditions and forcing and their resulting dynamical instabilities, RCE focuses attention on moist convective processes and their interactions with radiation and circulation. Models in which convection becomes more organized with warming exhibit super-Clausius-Clapeyron growth of precipitation extremes, driven by increased updraft area fraction and enhanced precipitation efficiency due to increases in column relative humidity in the moist, aggregated region. These results emphasize that accurately modeling convective organization is crucial to predicting changes in extreme precipitation in a warming climate. Next, I present preliminary results from the recent ORCESTRA/PICCOLO field campaign in the tropical Atlantic in August-September 2024. We combine precipitation retrievals from the SEA-POL radar deployed on the RV Meteor with measurements from other instruments and satellite observations to evaluate relationships between convective organization, precipitation, and radiative processes.



Zoom: <https://cuboulder.zoom.us/j/4713174822?omn=99341251732>

Passcode: ATOC

About the ATOC Colloquium

The Department of Atmospheric and Oceanic Sciences (ATOC) Colloquium is typically held **every other Friday** from **11:00 AM–Noon**. Colloquia alternate between the following formats: (A) Full-length talk by a faculty member or invited speaker, (B) Three conference-length talks by graduate students. If you would like to nominate a speaker (including self), please email the ATOC Colloquium Committee Chair, Prof. Jianghanyang (Ben) Li (Jianghanyang.li@colorado.edu). Please visit www.colorado.edu/atoc/colloquium for further details.