



# ATOC COLLOQUIUM

## Welcome!

Please join us for the next ATOC Colloquium on **Friday, September 17** from **11:00 AM–12:00 PM**. This week's colloquium features **Yiming Guo (NCSU)**, **Lei Zhang (ATOC)**, and **Jed Lenetsky (ATOC/INSTAAR)**. We are using a hybrid format for colloquia this semester (Fall 2021) so please either join us in person in **SEEC N128** (seating capacity will be capped) or using the following Zoom link : <https://cuboulder.zoom.us/j/91284779271> Passcode: ATOC

### Yiming Guo ▶ Mesoscale air-sea interaction and eddy potential energy budget: is it important?

Mesoscale air-sea interaction is becoming understood as a significant sink of eddy potential energy (EPE). However, it remains unclear how the air-sea sink modulates the conversion of EPE to eddy kinetic energy (EKE) and whether it is necessary to develop new parameterizations of this missing process in coarse-resolution climate models. In this study, we use long-term available remote-sensed surface observations and a global high-resolution POP simulation to assess energy conversion rates through local and global analysis and estimate the role of mesoscale air-sea interaction in modulating eddy energy conversions in the baroclinic instability.

### Lei Zhang ▶ Indian Ocean Dipole leads to Atlantic Niño

Atlantic Niño is the Atlantic equivalent of El Niño-Southern Oscillation (ENSO), and it has prominent impacts on regional and global climate. By analyzing observational datasets and performing various model experiments, we show that positive phase of the Indian Ocean Dipole (IOD) can weaken the easterly trade winds over the tropical Atlantic Ocean and cause warm SSTA, triggering the Atlantic Niño.

### Jed Lenetsky ▶ The Bering Strait and seasonal sea ice prediction

Skillful seasonal predictions of Arctic sea ice on a regional scale are important for the safe navigation of Arctic waters and for local indigenous communities who use sea ice for hunting, fishing, and recreational activities. To date, sea ice prediction efforts in the western Arctic Ocean have largely relied on sea ice thickness anomalies to initialize forecasts. In the Chukchi Sea however, sea ice conditions are strongly influenced by the heat content of Pacific Waters entering the Arctic Ocean via the Bering Strait. This seminar will highlight the importance of the Bering Strait ocean heat transport for seasonal sea ice prediction in the Chukchi Sea, as well as recent advancements towards an operational sea ice forecast for the region.

## About the ATOC Colloquium

The Department of Atmospheric and Oceanic Sciences (ATOC) Colloquium is typically held **every other Friday** from **11:00 AM–12:00 PM**. 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 or postdocs. If you would like to nominate a speaker (including self), please email the ATOC Colloquium Committee Chair, Prof. Jan Lenaerts ([jan.lenaerts@colorado.edu](mailto:jan.lenaerts@colorado.edu)). Please visit [www.colorado.edu/atoc/colloquium](http://www.colorado.edu/atoc/colloquium) for further details.