

Intrinsic Dynamics and Stratospheric Interactions of the Hurricane Outflow Layer

The upper-level outflows (ULO) of hurricanes contain the cirrus cloud deck that is seen by satellites which provide the vast majority of real-time information about storm size and intensity. Due to the lack of in-situ observations, our knowledge of the dynamics and moisture transport in this region is very limited. Overshooting tops of thunderstorms in the outflow may, or may not, be a source of water vapor for the stratosphere, with implications for global climate and warming. In this project, we will use a combination of observations from aircraft reconnaissance, ground-based radar, and satellites, as well as high-resolution and high-quality numerical modeling simulations to investigate these topics. Graduate assistants will be involved in analyzing observations and performing simulations with the WRF model. Students with undergraduate majors in sciences outside of meteorology are welcome to apply.

