

## **Observations of Convective Storm Anvils in Florida**

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The Citation Research Aircraft is a jet manufactured by Cessna and modified by the University of North Dakota for conducting atmospheric research. The basic instrument package includes measurements of aircraft speed and position, along with atmospheric state parameters, such as temperature, relative humidity and winds. The addition of cloud physics probes enables the Citation Research Aircraft to be an ideal platform for in-situ measurements of anvils from thunderstorms. The detailed measurements provided by the aircraft's instruments help to understand remote sensing observations made by surface and satellites platforms. The Florida 2015 Airplane and Cloud Measurements (CAPE2015) is a field project designed to help the United States Navy continue improvements on the high-resolution Mid-Course Radar (MCR). CAPE2015 obtained over 20 hours of aircraft measurements concurrent with measurements by the MCR. Observations are of thunderstorm anvils near Cape Canaveral, Florida, between an altitude of 29,000 and 40,000 ft. Ice water content and reflectivity are calculated assuming solid, spherical ice particles using measurements from the airborne two-dimensional stereographic (2D-S) probe. The validity of the solid, spherical ice particle assumptions are tested by analyzing the aspect and mass ratios of sampled particles. The invalidity of the simplistic assumptions are proven by the aspect and mass ratios being less than one, which suggests that the sampled particles are neither solid nor spherical in nature. Future work will refine the processing methodology and compare in-situ measurements with the concurrent measurements of the MCR.