Conference: International Conference on Clouds and Precipitation 2021 (ICCP2021) in Pune, India on August 3-7, 2020.
Keywords: Cirrus Clouds, Basic Cloud and Precipitation Physics, Cloud Electricity
Presentation Type: Poster
Poster Title: Observations of Chain Aggregates in Florida Cirrus Cloud Anvils
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Abstract: Several aircraft field projects have observed aggregates of chains of similar sized crystals in the tops of tropical thunderstorm. Chain aggregates were observations during research flights of the North Dakota Citation Research Aircraft during summers of 2015 and 2019. Cloud image probe measurements are available for 2015/2019, while high resolution steorographic images and aircraft based cloud electric field measurements are available for 2019. Particle images indicates that the chain aggregates are typically composed of several plates connected by small joints. With over 100,000. particle images available, manually classifying particles as a chain aggregate is time consuming; however, necessary to enable the location of chain aggregates to be place in the context of the storm's evolution. The aircraft's position and concurrent, multi-radar observations are used to determine if chain aggregates occur more often near convective cores or at different altitudes within the cirrus cloud anvil. In-cloud, electric field measurements are used to access the importance of field strength on the existence of the chain aggregates by investigating flight-to-flight variations. Since the aggregates can contain 10 or more plates, the chains are sufficiently larger than the 100-300 um diameter individual plates themselves. Determining the process that creates these large sized particles in cirrus cloud anvils enables the development of models to predict their occurrence.