An Investigation into the Characteristics of Total Lightning Data in Severe Storms
Session Topic: Meteorological Applications of Lightning Data

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Studies have shown that total lightning data, with both Intra-cloud(IC) and cloud-to-ground (CG), have good correlation with the development and severity of storms. Severe storms containing variables such as high wind, hail and tornados often generate strong lightning with high IC flash rate in the early stage of convective development and high CG flash rate in the later stage. High total lightning flash rate and rapid rate jump can be used as the precursor of severe storms, and the warnings based total lightning data can provide significant lead times.

This study will investigate additional properties, such as flash rate, IC/CG ratio, peak currents, etc. of total lightning data in severe storms in certain climate regions. The goal is to identify the characteristics of the lightning data in different types of severe storms.