



Total Lightning and Radar Reflectivity: A Study and Application

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Studies have shown there is a certain relationship between lightning flash rate and radar reflectivity, but the correlations vary due to the weather pattern changes in different regions and seasons. Many of the past studies were based on cloud-to-ground (CG) lightning data, and some studies were based total lightning data from LDAR covering small areas.

In this study, we will utilize the total lightning data from the Earth Networks Total Lightning Network (ENTLN) and radar data from the National Weather Service (NWS). We attempt to analyze the relationship between the total lightning data and radar reflectivity for the CONUS and other regions that ENTLN has good coverage. One application from this study is to create a current precipitation map solely based on the total lightning data for regions that lack of radar coverage.