

## The Evolution of a Long-Lived Mesoscale Convective System Observed by GLM

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**Peterson, M. J.; Rudlosky, S. D.; Antunes, L.**

Continuous Geostationary Lightning Mapper (GLM) observations are used to document total lightning activity over the life cycle of a long-lived Mesoscale Convective System (MCS). MCS's may be few in number, but they are important for the Global Electric Circuit (GEC) because they sustain high lightning flash rates and quasi steady state conduction currents (Wilson currents) over longer time periods than ordinary isolated convection. The optical characteristics of the flashes produced by MCS's change over time, providing additional insights into the precipitation structure, convective mode, and evolution of the storm system. These insights are particularly useful in areas void of radar observations. Intercalibrated passive microwave radiometer data from the Global Precipitation Measurement (GPM) constellation also are used to estimate changes in Wilson current generation as the system evolves. These results highlight the role of MCS's in the GEC, and showcase how optical flash descriptors relate to thunderstorm organization, maturity, and structure.

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