



## **Observational and Modeling-based Study of Electrified Thunderstorms in Corsica**

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To demonstrate the strong synergy between instrumentation and modeling tools to support the interpretation of lightning optical data of up-coming space-based geostationary missions, the temporal and spatial evolution of two thunderstorms in Corsica, one with a regular polarity (25 July 2014) and one with an inverted polarity (13 June 2015), were investigated through a detailed analysis of concurrent observations and numerical simulations. The electrical activity was simultaneously documented with the Lightning Mapping Array SAETTA (Suivi de l'Activité Electrique Tridimensionnelle Totale de l'Atmosphère; this conference) operated in Corsica since July 2014 and with the French operational lightning detection network Météorage. The cloud resolving model MesoNH and its explicit electrification and lightning schemes, successively simulated the spatial and temporal locations of the storms but also the number of flashes and the storm polarity. Both SAETTA and Météorage networks, and MesoNH electrification and lightning modules will be first introduced. Then, observations and simulations will be discussed for the two studied storms with an emphasis on the causes of the different storm polarities.

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