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Simulation of electrified storms over Corsica and comparison with several lightning detection networks

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Since 2014, the lightning observing network SAETTA with 12 LMA stations has been deployed in Corsica to monitor the 3D electrical activity in a range of 150-200 km from the center of the island. In complement, the operational lightning location system Météorage provides routinely informations about flash count and location, and discrimination between cloud-to-ground and intra-cloud flashes. Both SAETTA and Météorage data were used to evaluate the accuracy of the cloud electrification CELLS
module implemented in the mesoscale cloud-resolving model Meso-NH. The presentation
will focus on a local convection case (25 July 2014) that produced more than a thousand of flashes, on the case of an eastward propagating system (21 July 2014) which was more difficult to reproduce, and on a recent case taken from the 2015 dataset. This study aims at illustrating the realism and the potential of explicitly modeling electrified clouds like MesoNH in preparation to the use of the next-coming optical detection of lightning flashes from space (ISS-LIS and MTG-LI) over the Mediterranean area.