



On the use of model-based microphysics-lightning relationships for constraining passive-microwave precipitation retrieval from space using lightning data: Application to case studies of the EU FLASH project

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Within the FLASH project, we use the 1.5-dimensional Explicit Microphysics Thunderstorm Model (EMTM) to generate quantitative relationships between the microphysical and electrification properties of thunderstorms, that are then utilized as classification criteria within our Bayesian precipitation retrieval algorithm so as to help cloud profile selection by means of lightning data. In this paper, we describe the rationale of this approach and discuss the results of its application to some storms that occurred over central Italy during autumn 2008 and that have been considered within the FLASH project.