



EGUsphere, referee comment RC1
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Comment on egusphere-2022-637

Anonymous Referee #1

Referee comment on "Assimilation of Meteosat Third Generation (MTG) Lightning Imager (LI) observations in AROME-France – Proof of Concept" by Felix Erdmann et al.,
EGUsphere, <https://doi.org/10.5194/egusphere-2022-637-RC1>, 2022

Review of the paper

Assimilation of Meteosat Third Generation (MTG) Lightning Imager (LI) observations in
AROME-France – Proof of Concept

By:

Felix Erdmann, Olivier Caumont, and Eric Defer

General comment

This paper shows a proof of concept of a method to assimilate lightning in the AEROME model. The method is based on the 1D-3Dvar method elaborated by Caumont et al. (2010) and used for radar reflectivity data assimilation. A function to compute the FED (Flash Extent Density) is proposed based on the graupel mass simulated by AEROME model.

The paper is well written and interesting and I suggest the publication of the paper with some corrections. These corrections are suggested as sticky noted to the pdf of the paper.

Major points

It is not very clear what it is shown in Figure 3. In the text explanation it is stated that the graupel mass column is considered. The value should be mm. In the Figure there is graupel mass [kg]. Please clarify better.

Section 7.1: I suggest to add a Figure to support the discussion.

Sections 7.1.3: It is important to highlight that this result is not general because of the limited number of cases considered in this paper.

Minor points

There are several minor points that the authors can consider before the publication of this paper. They are reported as sticky notes to the attached pdf of the paper.

Please also note the supplement to this comment:

<https://egusphere.copernicus.org/preprints/2022/egusphere-2022-637/egusphere-2022-637-RC1-supplement.pdf>