Comment on amt-2022-31
Anonymous Referee #1


This paper proposes a new algorithm for the detection and tracking of DCC from geostationary observations. The data and method are very well presented, and the manuscript is well written and easy to read. This new method addresses some issues related to DDCs detection at any moment of their lifetime and their movement tracking, showing good performances. The method claims to improve the accuracy of the current detection algorithms; however, I believe it would benefit the paper to place this work in a broader context. It could be beneficial to the paper to mention the accuracy of some of the most common DCCs detection algorithms for missed and falsely detected DDCs. In general, the manuscript lacks some data to support and justify certain affirmations. In the minor comments I added some parts that could benefit from a better context, in my opinion.

Minor comments:

- In the introduction, please briefly introduce the concept of DDCs.
- All the references to figures throughout the text should be if within the text or Figure if at the beginning of a sentence.
- L52-55 Maybe it would be useful to give some numbers here (e.g., the spatial resolution improved from ~5-7km to ~1km) to give an order of magnitude of the improvements with the newest generation.
- Acronyms need to be introduced only once. Please double check your manuscript for this (e.g. L107). On the other hand, some acronyms were not introduced (e.g. L130 LW)
- L121-122 Please add again some numbers here for SNR to give an order of magnitude of the improvements.
- L140-141 This sentence is not clear, please reformulate
- L176 What does sufficiently mean? Please give more data.
- L187-189 Please add references, numbers or data to support your affirmation that the Farnebäck algorithm is robust for the complex morphology of cloud fields.
- In Fig. 9 the histograms are barely visible, please regenerate them with better choice of the axis limit
Small typos and notes:
L16 this framework to be applicable
L37 how satellites operating in the visible and IR
L40 large area
L43 the Geostationary Lightning Mapper
L45 Column mean radar reflectivity [...] shows
L52-53 The newest generation [...] offers
L156 GLM has the same field [...] 
L183 is used here for to
L183 [...] tracking of DDCs .
L197 based of of
L200 its
L204 include the effects
L251 and edge-based
L269 the detected anvil cloud begins
L306 FAR of 0.27