

Atmos. Chem. Phys. Discuss., referee comment RC1
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Comment on acp-2021-154

Anonymous Referee #2

Referee comment on "Impacts of tropical cyclones on the thermodynamic conditions in the tropical tropopause layer observed by A-Train satellites" by Jing Feng and Yi Huang, Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-154-RC1>, 2021

This is a very thorough study of a relevant topic, with a number of interesting results. The analysis is careful and detailed, and the manuscript is well organized and well written. For these reasons I recommend publication with minor comments.

Here are those minor comments:

The use of CIWV to represent water vapor amount above a certain layer is non-standard and thus a bit confusing. 'Column integrated' implies total in the entire column; a web search shows many examples of this usage: <https://www.google.com/search?client=firefox-b-1-d&q=column+integrated+water+vapor>. One suggestion is to use "Layer Integrated Water Vapor", whose meaning should be immediately apparent.

A few more details on the analysis are needed in the Abstract. Please explicitly mention the A-Train instruments used and what quantities are examined. Also, please expand briefly on the synergistic retrieval. What specific instruments does it use? A sentence or two should suffice. Also, how are cooling rates estimated. Again, a sentence or two will suffice. Finally, change 'convections' to 'convection'.

Line 118. Please state which two (or more?) AIRS L1B frequencies are used to estimate brightness temperature.

Include the OT, NOT, etc. definitions in figure 2 caption. Otherwise, terms for quantities in the figure cannot be fully understood without knowing where in the text the figure is discussed.

Line 339. Change `cools` to `cool`.

Line 463. Change "under overcast cloud conditions" to "for overcast cloud conditions" or something similar. Please don't use "under" because it implies beneath the clouds.