

The authors have addressed most of my comments well, but some of the comments need further clarification. See below,

- (1) About my previous major comment #2, I do not think the authors directly addressed my comment. The question is why the INP for immersion and contact freezing should be set to the same. Is this the reality? Any justification from observations?
- (2) The author did not address the first part of the specific comment #1. I was asking about the results of rain rate PDFs since the authors only looked at the total precipitation.
- (3) The author did not address the specific comment #4. Here is the sentence “Since immersion and contact freezing require the presence of liquid water, they are thought to be the dominant ice formation pathway in mixed phase clouds. The above studies seem to suggest this is the case”. This sentence is the start of that paragraph, and so many different studies are discussed in the previous paragraphs. Therefore, the appropriate way to make the sentence clear is either putting references for “the above studies” or replacing “the above studies” by specific references. If the references are many and discussed previously, example references should be put here to help readers to connect with the previous discussion.
- (4) For my specific comment #8, the authors responded with “This point was raised by the first reviewer, and as such, has already been addressed”. I do not think this is the way to address a comment. You basically asked this reviewer to read another reviewers’ comments and your detailed responses to another reviewer. Even if so, there are 14 pages of your responses to the first reviewer and you should at least point out the pages and lines so that I can find the right place. I did a search by searching the keywords “liquid”, “layer”, etc for this comment and did not find relevant comments from the first reviewer. The authors also indicated there is no text change related to this comment. I am almost sure that explanation about why two disconnected liquid layer exist in the warm bubble initiated convective clouds should be added since this is not something normal. The explanation involves in more analysis as well.
- (5) The authors did not address the specific comment #9 well. Yes, the responses of precipitation to increasing aerosol concentrations differ with cases, and the point is to understand why. The authors claimed this is outside the scope of this paper. A common comment of both reviewers was that the paper was lacking in-depth analysis. The reviewer #1 has the exact the same comment about this, i.e., “when there are effects of changing aerosol concentration, these are rightfully stated, but I think the authors could go one step further and explain why this would be expected to have influences (+ve or –ve biases) on the precip amount or total water content”. Therefore, “outside the scope of this paper” does not really apply here.
- (6) About my specific comment #10, I’d like to reiterate that it is a common base that different types of clouds have different dynamics and microphysical processes, and therefore precipitation efficiency is very different. Therefore, the comparison of rain amount or the relationship of rain amount with liquid/total water between different types of clouds makes no points. In addition, the reason for the precipitating liquid doesn’t decrease the total water in the stratiform case might not be microphysical, but entrainment of moisture from cloud top or the change of large-scale forcing, etc. If the

authors want to emphasize this, then you need to provide the reasons to explain it. Otherwise I think you can drop it.