Second Review of **The role of ice nuclei recycling in the maintenance of cloud ice in Arctic mixed-phase stratocumulus**
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1 General Comments

The authors have successfully addressed the concerns presented after the first round of reviews. Because the manuscript is fairly abundant with information, it is clear that the authors made satisfactory attempts to clarify any uncertainties that the reader may have. My recommendation for this manuscript is *accept for publication* after considering the minor comments below.

2 Specific Comments

1. Line 725, "with" should be ", which"
2. Line 790, The authors may consider editing this sentence to read "Therefore, additional IN become available for activation with decreasing temperature and as the cloud layer cools" so as to imply that a cooler portion of the cloud would activate more IN according to Fig. 2. Also, the cloud layer in Fig. 1 suggests that IN would only be activated near cloud top, at least initially, as the cloud base extends to temperatures warmer than the threshold temperature bins in Fig. 2. Perhaps this is only a consequence of model spin-up.
3. Lines 809-10, "..additional IN that are available for nucleation in the coldest bin": The temperature of the coldest bin in Fig. 2 falls below the minimum temperature of the cloud layer in Fig. 1, so perhaps this result is only valid once the layer temperature drops? Additionally, in the following sentence, should it be assumed that the "first bin" corresponds to the warmest temperature?
4. Line 888, I believe "cloud layer" should be replaced with "mixed layer".
5. Line 959: "buffering" is not yet a common term and should be defined.
6. Figure 2 caption, "IN increments...at colder temperatures": This sentence is unclear. What is meant by IN increments between lines? An example of this may help. Also, are the "colder temperatures" those below -15, or colder?
7. Figure 5: Is it safe to say that the autoconversion threshold from ice to snow is 0.7 mm? Are ice results throughout (e.g. IWP, etc.) the paper for ice only, or do they include snow? If ice only, are the IN that are activated as ice then converted to snow considered lost?
8. Figure 7: Perhaps consider changing the colorbar in (D) so that $> 100\%$ and $< 35\%$ are not both white.

9. Figure 9: [1] N_{NI} on line 1510 should be N_{ICE}. [2] It appears there are extra black lines in the legends of (A) and (B) in front of "Activation" and "Precipitation," respectively. [3] Should the red line in the legend of (B) read turbulence? [4] Are all the results in (B) at cloud base or does this only apply to precipitation? If the former, perhaps change the title to "IN Flux at cloud base".

10. All figures: Please consider adding a white background to all the figure legends.