

## Reply to RC C1407 of Patrick Chuang:

We thank the referee for carefully reading our manuscript and the valuable comments and suggestions. We have included responses to the reviewer's comments below and indicated where changes were made to the text.

### Page 3: are there any that are at equilibrium?

Mixed-phase clouds are thermodynamically unstable, therefore the word "most" was deleted

### Page 10: "subject to" instead?

Changed to "subjected to"

### Page 15: saddle

Typo changed to "saddle"

**Page 16: because you're using a log scale, it's hard to see the discrepancy. you should at least describe the ratio between these measurements. even better would be to plot the ratio of fog monitor to holimo concentrations at different size bins. this will help people understand what "agree quite well" means.**

The ratio of the Fog Monitor to HOLIMO II concentrations are shown in Figure 1. The HOLIMO II size bins are different from the Fog Monitor size bins. To make a comparison possible, for every HOLIMO II bin the nearest Fog Monitor bin was chosen. The concentrations differ by up to a factor 5 (particularly for large particles where the differences can be explained by the non-isokinetic sampling of the Fog Monitor). Because of the different measurement techniques and sampling systems a precise agreement between the two instruments cannot be expected. Because this comparison is not a main point of the paper we think a figure is not necessary, but we modified the sentence to:

During the January period, the number size distributions measured by HOLIMO II and the Fog Monitor agree *within an order of magnitude*. The shape of the distributions agrees quite well, especially when taking into account that the Fog Monitor is not well-suited for sub-zero temperatures or ice-crystal (i.e. aspherical-particle) sizing.

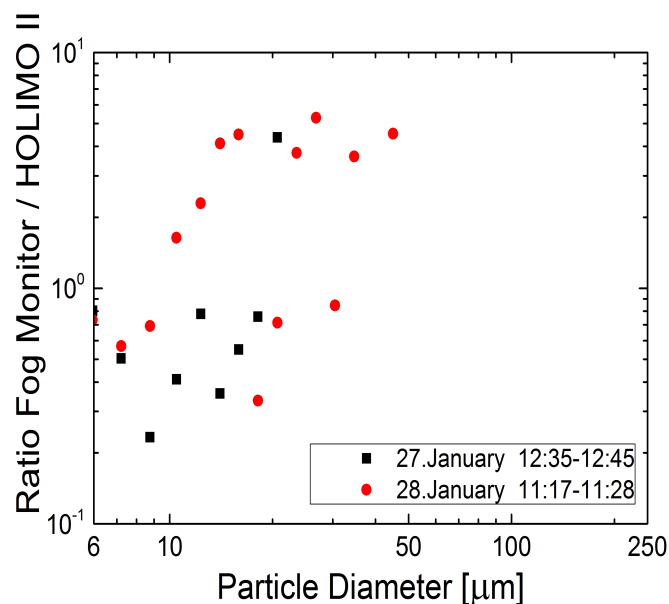


Fig 1.: Instrument comparison of number concentrations measured by Fog Monitor and HOLIMO II at JFJ

### Page 16: not

Typo changed to "not"

**Fig. 2: typos in diagram. also, there's no place that says the left diagram is a blow up of the front of the instrument... it actually took me a minute to figure that out! make sure to clearly say this is a blow-up, and maybe add lines to indicate this too.**

In Fig. 2 lines were added to indicate that the left panel is a blow up and it is now also mention in the figure caption by adding the sentence “The inlet tip is magnified in a blow up (left panel).” The typos in the figure were due to pdf-issues and were corrected.

**Fig. 7 I can't see the raw HOLIMO line. There should be a large correction, esp. for the larger particles, for the anisokinetic sampling so it can't be true that the raw and corrected are overlapping.**

It is true, that the corrections change the concentrations significantly. To make the graph not too confusing we decided to exclude the raw data. The legend of the figure is changed accordingly.