



EGUsphere, referee comment RC2
<https://doi.org/10.5194/egusphere-2022-501-RC2>, 2022
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Comment on egusphere-2022-501

Anonymous Referee #2

Referee comment on "Impact of the sampling procedure on the specific surface area of snow measurements with the IceCube" by Julia Martin and Martin Schneebeli, EGU sphere, <https://doi.org/10.5194/egusphere-2022-501-RC2>, 2022

The paper is concise and relatively clear though the format is a bit disorganized and the terminology is not always consistent. The figures positively contributed to the representation of the data and methodology though more specific figures related to sample preparation would improve the explanation of this process.

The experimental design was thoughtful and could be impactful to the field. Refining our understanding of the caveats associated with field instruments will help improve future measurements and use. The paper would benefit if the authors add more information about sample preparation (with additional visual aids) and context for the snow samples used in the experiment. It would also be beneficial to describe the micro-CT methods and analysis, including any differences associated with two nominal scan resolutions (15 & 18 μm). Could the authors also better describe the "manufactured micro-CT sampling kit" and how it is used?

Generally speaking, it would be helpful to have the results presented in the same order as the data, or it would help to introduce and explain the format in which the data will be presented. Figures would be more accessible if they were adjacent to where they are references in the text and the figure captions could be improved if more information is added to them and if they are written in complete sentences.

Line 6: Please describe what these "artificially created particles" are.

Line 20: I recommend re-writing the sentence "We focus on.." to improve clarity.

Line 22: Is it necessary to mention black carbon at all? It is the only time it is mentioned in the entire paper.

Line 39: Recommended change "Next, a second SSA is measured with ..."

Line 46-48: Can you comment on any variability associated with different micro-CT scan resolutions?

Line 54: I recommend rewording the sentence "Eight pictures..." for improved clarity.

Line 68: I recommend rewording the sentence "As the desired output variable.." for improved clarity.

Line 71: In the results section, Table 3 is both spelled out and abbreviated as "Tab.3".

Line 79: Recommend changing sentence to " However, the SSA measured by the micro-CT is 24% smaller than that measured by the IC."

Figure 1 caption: The figure is described as having a "left, middle, and right". Do you mean top, middle, and bottom? It might be better to refer to "panels (a), (b), and (c)" instead.

Figure 3: Please describe the manufactured micro-CT sampling kit. There is no reference to the (b) and (c) labels on this kit.