Really excellent, ground-breaking paper.

Some minor comments:

1. Why not work on fresh snow rather than snow stored for 7 months. Perhaps, the authors can comment on this.

2. We are told the pore size increases 1%. How real is this? How big are the error bars?

3. "Representativity" should be changed to the real English word of "Representivity".

1. The objective was to measure local phase change fluxes against the orientation of crystals relatively to the temperature gradient direction. Working on fresh snow would have lead to possible image resolution issues as well as to a rearrangement of the grains, thus complexifying the following analysis. Working on snow stored at -20°C for 7 months permits to overcome these problems. This was clarified in the text.

2. The sentence in the original version of the article is indeed confusing: the quantity of pores with sizes between 30 µm and 80 µm increases from 3 % to about 4 % of the total pore volume. Thus, the proportion in that range of sizes increases by 33 % of its initial value. This was clarified in the text.
Concerning the error bars: errors in the pore size measurement at a point of the microstructure would arise from segmentation and discretisation of the microstructure, and might lead to an error of the pore size of about 2 voxels = 13 µm. The effect of this error on the distribution is a random misclassifaction of each point of the pore space, over a range with length 13 µm centered on its actual value. In other words, this error leads to a smoothing of the pore size distribution on a window of about 13 µm. Here, the range over which the trend is observed (> 50 µm) is significantly larger than the estimated errors above. Thus, we are rather confident with the fact that the observed trend actually exists.
We can also notice that this increase of small pores is consistent with the increase of SSA observed in Fig. 11.

3. This has been corrected in the new version of the article.