

..
Replies to comments by referee #1:

January 12, 2021

Original comments in italics; reply in roman letters. The revised manuscript is appended.

Many thanks for the support expressed for publication of this paper in spite of the unusually long lapse of time since the experiments were performed. Since the topic has not been taken up over the past decades, these results are still novel contributions.

I clearly recommend to publish this manuscript once my remark below is addressed. I hope that the publication will advance more work on this fascinating effect and will foster the search for more materials, possibly of greater atmospheric relevance, that exhibit PFN.

It isn't unrealistic to think that other materials will also exhibit PFN since the materials already known to have that property are quite varied. Looking for PFN on INPs detected in precipitation, or in atmospheric aerosol in general may lead to important findings. Also, developing cloud seeding materials that have been pre-activated seems like a promising possibility..

Remark: I am not convinced that the more qualitative figure 18 is helpful in its current form. In particular, I cannot easily see how it is quantitatively in accord with the data presented earlier, e.g. in Figure 3, which to my understanding, should map out the same space if the vertical bars are taken into account. I would suggest to either remove figure 18 or to augment it with overlaid experimental data, e.g. in the form of a box- whisker plot.

My intention with this figure was to give a quick, suggestive summary of the results and to contrast them with the concept of a well-defined T_D indicated by earlier research. Variations among the various experiments, due to different particle concentrations and other factors, made Fig. 18 qualitative rather than quantitatively precise. Since both reviewers found this diagram problematic, the figure will be removed from the final version.

Thanks for pointing to the typos. Corrected.