

Interactive comment on “Opinion: Cloud-phase climate feedback and the importance of ice-nucleating particles” by Benjamin J. Murray et al.

Trude Storelvmo (Referee)

trude.storelvmo@geo.uio.no

Received and published: 16 October 2020

I'd like to congratulate the authors on an important and well written opinion article, and generally agree with the main findings and recommendations. A few things that could be worth adding in a revised manuscript are: i) While INPs are important, there is a general lack of understanding also of the other (subsequent) processes governing cloud glaciation (secondary ice production, WBF process, riming, seeder-feeder, etc). These processes tend to matter way more than INPs when it comes to cloud phase in GCMs. In other words, even with perfect knowledge of INPs, a better cloud phase feedback representation is not guaranteed. This should be stressed more. ii) The idea

C1

that INPs could increase in abundance in future in response to warming is intriguing, but not supported by paleoclimate records in which cold=dusty and warm=dust-free. This should be acknowledged. iii) the paper is generally well written, but fixing a few typos towards the end of the paper would make it even better.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-852>, 2020.

C2