

Dear Editor,

we have performed the revisions, and addressed all comments in the three referee reports we received.

Below are the most significant revisions:

- we have re-analysed all ice-nucleation data from the SPIN
- more in-depth analyses of supportive observations (CCNC, SP-AMS, etc.), also descriptions of those measurements improved
- ice nucleation active density model added to interpretation of results
- we have revised all figures due to re-analysis of the ice-nucleation data