

Responses to review of revised submission

1. An explanation what INUIT stands for has been added to the manuscript.
2. We fully agree that the comparisons of median freezing temperatures obtained from different methods are rather critical and that the comparisons of nucleation rate coefficients and surface number densities are sufficient. Therefore, Section 3.1.3 and Table 2 have been removed from the manuscript.
3. The sentence after Eq. 5, “Cases where freezing took place during the cooling stage of the drops were not considered...” caused a misunderstanding. The intention in Figure 6 was to show that after the adaption time the frozen fraction of drops did not stay constant but decreased further with time. The dotted lines in Figure 6 were not obtained from the data by regression. (In cases where this was done it is mentioned in the figure legends.) These lines in Figure 6 were drawn to indicate the exponential decay of the liquid drops with time after the adaption time. Therefore, the lines were pinned to the value of 5 seconds. The critical sentence should meant that the lines were not drawn through cases where all drops froze within the first 4 to 5 seconds. This part of the text has been re-written in the manuscript.

Regarding the calculation of the nucleation rate coefficient from wind tunnel experiments, this was done according to Eq. 4 (results shown in Figure 5) on the base of drops observed during the total observation time of 30 s. The temperatures at which all or most of the observed drops froze within the adaption time period of the first 4 to 5 seconds are not included in Figure 5 because in these cases the fraction of frozen drops after the total observation time reached 1 anyway and $J(T)$ is not defined (because of $\ln(1-1)$ in Eq. 4). So, it did not happened what the reviewer supposed that “Excluding them from counting as n_{liq} but not excluding them from N_{total} ...”. The regression line in Figure 5 is based on the values in the temperature range between -18 and -21°C.