

The answers are in red.

Authors presented a new experimental technique to investigate the ice nucleating properties of ambient aerosols. The temperature (Temp) and supersaturation (SS) fields within the cloud chamber are validated using temperature-humidity probe meter. If I'm correct, this meter will provide Temp and SS measurements at only fixed location (s) within the cloud chamber.

Actually the temperature-humidity probe meter does not provide the supersaturation value; but it is estimated from the previous calibration as shown in Figure 2.

Based on these measurements authors assume that Temp and SS fields are uniformly distributed within the chamber. However, authors do not provide justification for this assumption. Every time when air is injected to increase RH (Fig. 2), this could produce air motion and turbulence. It is possible that the turbulent air motion could distort uniformity of SS field and might produce sub-saturated conditions at few regions within the chamber. This would affect the IN concentration measurements.

It is correct that every time when air is injected into the chamber, it produces air motion and turbulence. Taking into account the vapor diffusion process in air, this transient state could last few seconds until the system achieves the new equilibrium state, in which Temp and SS will be again uniformly distributed. However, it is important to remark that the new injected air has a water vapor density larger than the vapor density within the chamber, which is already supersaturated over ice; thereby, there is no physical reason to think that any macroscopic region of the chamber can be subsaturated over ice while the air is injected or later.

Wondering if authors have any comments on this? Thank you.

Thanks for the interest in our paper

María Laura López, Eldo E. Ávila