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Atmospheric Measurement Techniques Discussions

Interactive comment on "Experimental quantification of contact freezing in an electrodynamic balance" *by* N. Hoffmann et al.

Anonymous Referee #1

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A thorough, concise and timely manuscript on the topic of contact freezing. Often suggested as one of the dominant (i.e., highest T) freezing modes, the data on contact freezing are spotty. Hoffman et al. have laid out novel experiments with an EDB setup to tackle this problem. This reads as an instrumental paper (appropriate for AMTD) but also contains a quality scientific study. There are only minor issues with this paper and I expect it to be published quickly.

Clarifications required: 1. Presumably a droplet (RH=100% wrt liquid water) is far from equilibrium with any ice that could be on the trap walls. Are drops stable? How are they maintained? If they are not (if they are evaporating) would there not be phoretic effects? 2. Can the authors address the question of how charge may affect ice nucleation? Are there any expected differences from when a drop and aerosol with no charge comes in

contact?

I believe a reference is missing at 3423-1 "with results reported by () for illite" where the () should contain the reference.

I recommend that section 6 be removed. It is only two short paragraphs that essentially say what the authors are going to do. Either attach this to the conclusions without a new section title or remove it altogether.

This paper will have to be edited for English. There are several grammatical errors throughout; e.g. (but not restricted to!) 3408-6: "allowing to determine" (allowing for the determination), 3424-8: "is currently performed" (is currently being performed), etc.

Interactive comment on Atmos. Meas. Tech. Discuss., 6, 3407, 2013.