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Interactive comment on "Low-Temperature Triple-Capillary Cryostat for Ice Crystal Growth Studies" *by* Brian D. Swanson and Jon Nelson

Anonymous Referee #3

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review of "Low-Temperature Triple-Capillary Cryostat for Ice Crystal Growth" AMT manuscript 2019-137

This is a fairly well written description of a system for studying the growth of ice crystals in the atmosphere. How crystals grow and what determines their distribution of habit and size is a very important question for meteorology, and this paper represents significant progress in answering that question. I do have some comments on the paper however. If these are adequately dealt with, this paper definitely should proceed to publication in the journal.

Page 2 line 10; there is the statement "Neither effect typically occurs for cloud crystals". This needs some substantiation, at least in regard to the proximity of other growing crystals. Could the authors provide an estimate of the concentration of ice nuclei in a

typical cloud?

Section 2. This section purports to list several issues, and how they are solved in the CC2 design. The latter part of this aim seems to have been forgotten by the time point 5 is reached - there is plenty of discussion of the issues associated with capillaries interacting with crystal faces or vertices, but this is not tied to the CC2 design. This section would also be easier to follow if it were organised with subsections, rather than a list.

Section 3. Snowmax is apparently a trademark? A reference to a supplier (or a recipe when the name is first used) should be provided.

Reference list; the two references to Swanson and Nelson (2019 a,b) are quite inadequate!

Another very minor point is in the opening sentence of the second paragraph (of section 1) the authors do seem to like the work "likely" overmuch.