

Comments on the revised version of “How Much Snow Falls on the Antarctic Ice Sheet?”
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General Comments

I am pleased to see an improved manuscript in most respects, although several old items in my review require additional comment. I suggest to the editor that the first two are disagreements that he must address. The English is good – a few grammatical issues are noted.

Specific Comments

1. *Old item 1: Title:* Authors – I continue to be confident that your scientifically-careful estimate over part of Antarctica can form a solid basis for estimating the total over all of Antarctica as an additional and valuable addition to the manuscript’s current results. You are in the best position to make this calculation, and the non-specialist community is not. Furthermore, my experience says that, absent this whole-continent estimate, the partial-continent estimate will be mis-used by the non-specialist community as representing all of Antarctica. Editor – At this juncture the authors and I disagree on this point, so you get to make a judgment call; I am asking for one additional, approximate, and reasonably estimated calculation that will answer the title’s question.
2. *Old item 2: What does CloudSat miss?* Despite the reply that very light precipitation and deposition are treated equally, I think the text tends to mention deposition more prominently and often than light precipitation.
3. *Old item 3: “flags”:* Authors – I repeat: the terminology of “flags” usually seems to be what we would call “overpasses” or “samples”. Indeed, each sample has flag values indicating liquid or solid. At a minimum, you have to be really clear about what “flag” means if you intend it to indicate “sample”. Editor – Another point of disagreement. I find this usage confusing; again, you get to make a judgment call.
4. *Old item 6: P.1284,L.10 (old location):* “Interpolation” is fine, but what kind? Nearest neighbor, bilinear, splined, ...?

Technical Corrections

5. *Old item 19: P.1282,L.3:* Sorry for being unclear. I was suggesting saying “cloud particles and hydrometeors” because cloud was the point of CloudSat, and it’s important to remind the reader in these introductory remarks that the radar sees both.
6. *L.4* “but is not yet available. Satellite observations ...”
7. *L.22-23:* The 25% over a century and the 1.6 mm/year seem not comparable. If you mean 160 mm/century, I think it would be preferable to use the same units.
8. *L.26:* “... differs widely, ranging from”
9. *L.27:* CMIP3 is pretty out of date at this point. Is CMIP5 similar?
10. *L.35-36:* “... is therefore a need ... precipitation observationally to ...”
11. *L.116:* “occurrence”
12. *L.136:* “... 2011) among reanalyses. However, ...” or do you mean “of any analysis”?
13. *L.190-191:* It might be helpful to point out that the standard error decreases as the square root, or at least “non-linearly”.
14. *L.205:* “... d’Urville than other sites where no”

15. *L.213*: Presumably the Barnston citation should come after the HSS, not where it is, which implies that Barnston found this CloudSat result.
16. *L.231*: “than” should be “as”.