

June 11, 2017

Author response to peer reviews of ‘A variational technique to estimate snowfall rate from coincident radar, snowflake, and fallspeed observations’ by S.J. Cooper, N.B. Wood, and T.S. L’Ecuyer

We again thank the reviewers for their comments. We made the minor revisions as suggested in the Referee Report from Reviewer 1. We also added a sentence in the acknowledgments thanking the reviewers for their comments throughout the review process. These suggestions clearly improved our manuscript and will prove valuable in evaluating retrieval performance as we move forward with this line of research. In terms of the larger issues (e.g. ‘variability in variability’ and additional figures) discussed in the most recent reviews, we stand by our previous comments in our first author response.

Minor corrections:

- p6, 18: “The MASC ideally should be wind-shielded [...]”. As far as I know, there is no study investigating MASC (or similar instrument) performance with or without a windshield so I would temper this statement.

Response: We removed this sentence as the reviewer is correct. There have been no quantitative studies of the impact of wind-shielding on MASC results. We do briefly discuss the impact of wind speed, turbulence, and shielding on MASC results in a qualitative manner in Section 2.3 and will leave it at that.

- p12, 19: I would suggest to write “the hexagonal column model” to match the legend of Figure 7.

Response: correction made