Review of HESS-2017-228
Testing and Development of Transfer Functions for Weighing Precipitation Gauges in WMO-SPICE
John Kochendorfer et al.

Dear editor,

I have assessed the latest version of the manuscript and generally agree with the previous reviewers that the manuscript is well written. Furthermore, I did not find significant errors or mistakes.
I share the concern with the previous reviewers that the current manuscript is an extension of two previous papers in which the transfer functions were determined. Therefore, I suggest to highlight the implications of these findings for global solid precipitation measurements in order to make the results more relevant for the HESS audience.

Sincerely,
Obbe Tuinenburg

nb.: If necessary, you can contact me at O.A.Tuinenburg@uu.nl for the scripts to create the figures.

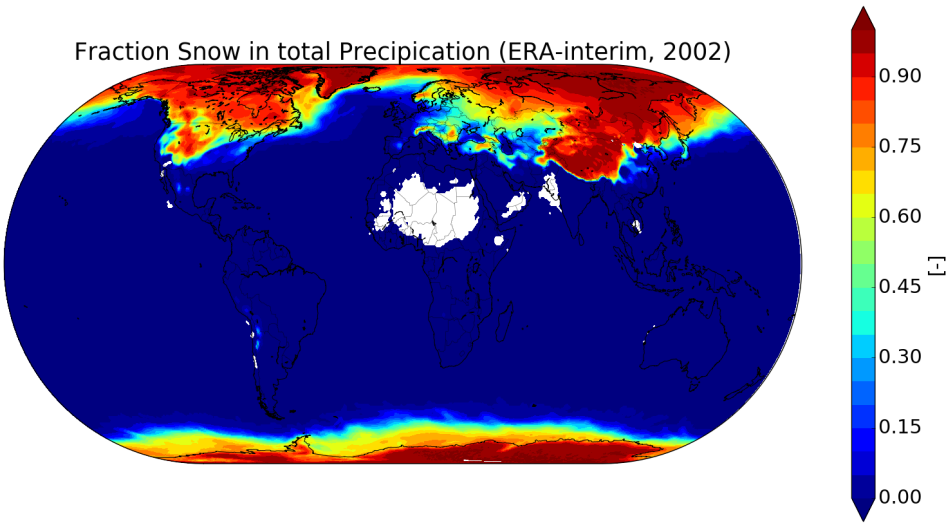
Comments:
1. Please define CE before its use in equation 1.

2. P11,L27-28: Would it be possible (data wise) to use the wind speed variability to test this hypothesis?

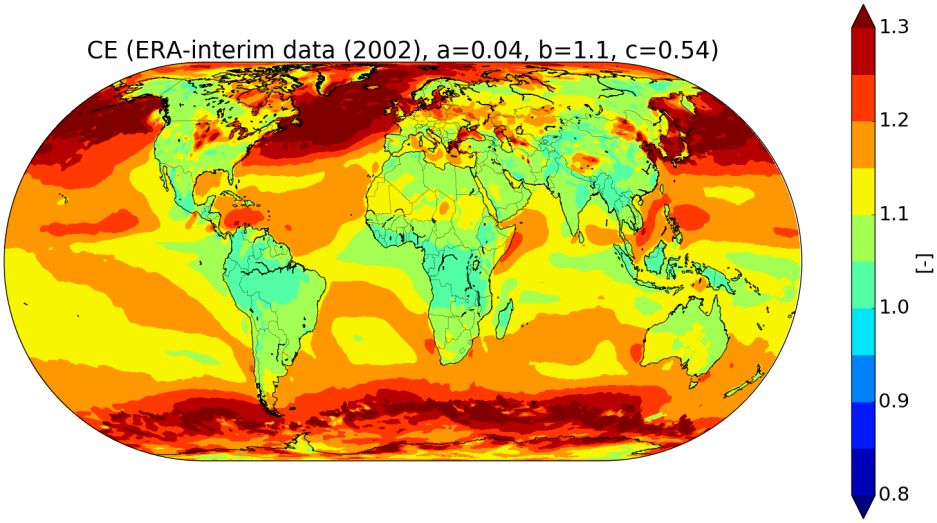
3. More in general, how do these functions hold if the wind speeds are very variable?

4. To highlight the broader context of this research, maybe Figure 1 can be adapted to show the fraction of solid precipitation in a shading. As for example the fraction in ERA-interim precipitation that is snow.

5. Again to stress the large scale applicability of this research, maybe a last figure could be added to the manuscript in which a typical global distribution of CE values is given for actual temperature and wind data. (See example figure for ERA-Interim for 2002, where the CE values (weighed for snowfall) are given for a sample gauge, based on Equation 1.) In that way, the reader knows what the scale of the error is if these transfer functions have not been applied. In this case this error is up to 25% over land, which may be quite significant for some applications.



ERA-Interim fraction of precipitation that falls as snow (2002)



Values for CE, weighed by amount of snow for one gauge, based on ERA-Interim (2002)