

Interactive comment on “Possible shift of spectral response function of the MODIS 6.8 μm water vapor channel causing a cold bias up to 3 K” by B. J. Sohn et al.

Anonymous Referee #1

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This very well written paper deals with possible issue in the knowledge of the SRF of the 6.8 microns channel and its consequences for quantitative use. The method is original and well described and makes a interesting use of the geo platform to propagate the IASI absolute calibration information onto the MODIS instrument. The stringent space-time-angular collocation is to be noted. The case of the 3K cold bias in the MODIS channel is clearly made. I recommend acceptation of the paper with very minor modifications. For the sake of it I list below a few remarks and I let in to the authors to respond and modify their manuscript if needed.

-although it is possible to get the information itself, I think it would be nice to provide to the readers some elements on the technique used to calibrate the MTSAT channel (BB vicarious etc..). In particular it would be nice to comment upon the stability of the MTSAT captor over the 6 months period used here.

-the scatter plots reveals some collocated pixels with very cold temperature (less than 240K) for tropical-subtropical conditions. Are these very cold pixels clear ? Is there any chance to have cirrus cloud contamination here ? Or those are large viewing angle scenes for which the linearity of the comparison might not be guaranteed. Can you comment on the need or not to filter out these kind of scenes ?

- while the two (winter and summer) fits both show high statistical significance, there are no comments on how one should use them or not to actually correct the MODIS temperature. Expanding on the further use of these fits (validity range etc...) would also benefit to the reader.

-the case for the 11 cm⁻¹ shift in the spectral function will be stronger if you actually show the plot of the effect of such correction. I encourage you to actually reinforce this last paragraph of Section 4.

Interactive comment on Atmos. Meas. Tech. Discuss., 3, 3277, 2010.

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