

Review of “Determining the Daytime Earth Radiative Flux from National Institute of Standards and Technology Advanced Radiometer (NISTAR) Measurements” by Su et al. 2018

The authors have addressed most of the reviewers’ comments adequately, I only have a couple of minor comments:

Thank you for spending time to review the paper!

1) The clear sky radiance database includes many surfaces, aerosol types and optical thickness, what atmosphere profiles do you use? Are there any variations in terms of humidity, pressure, traces gases?

For most cases, we only used one atmospheric profile (standard), we rerun the clear ocean case using the tropic profile. The ratios show very little sensitivity to the profiles used, only affecting the ratio to the fourth decimal point. We added a sentence on page 7 (line 179-181) to state this fact. We also realized that we only included one aerosol type in our calculation and also tested the sensitivity to aerosol types over clear ocean and found very little sensitivity.

2) A 4-hour running mean is applied to the NISTAR L1B radiances but the EPIC based global anisotropy is instantaneous. How much global mean anisotropy varies during the day and season? Would applying a 4-hour mean anisotropy or applying anisotropy to the NISTAR radiances before running mean make any differences?

To reduce the noise level of the NISTAR measurements, we were advised to use the running means of NISTAR radiance. To answer the reviewer's questions, we redid the flux calculation by simply using hourly mean NISTAR radiances and tested the flux biases and RMS errors for June and July 2017. For June, the monthly mean NISTAR SW flux changed from 213.5 to 213.4 Wm^{-2} , and the RMS error increased from 14.6 to 17.3 Wm^{-2} ; for July, the monthly mean NISTAR SW flux 209.2 to 208.5 Wm^{-2} , and the RMS error increased from 16.0 to 16.9 Wm^{-2} . For LW, monthly mean fluxes changed by less than 0.5 Wm^{-2} for both months, but the RMS errors increased by more than 4 Wm^{-2} for June and 6 Wm^{-2} for July. These results indicate that using running means do reduce the noise but has very little impact on monthly mean flux (less than 0.3%). The global mean anisotropic factors can change by up to 2-3% from hour-to-hour depending on the fraction of land and ocean in the EPIC field-of-view, and the viewing geometries of land and ocean, and the cloud properties.

We added a couple of sentences on page 16 (line 388-392).

3) L8-9, You may want to use sunlit consistently through the paper.

Modified, thank you!