

## ***Interactive comment on “Determining the Daytime Earth Radiative Flux from National Institute of Standards and Technology Advanced Radiometer (NISTAR) Measurements” by Wenying Su et al.***

### **Anonymous Referee #3**

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#### General comments:

This paper presents the scheme and algorithm of deriving TOA SW/LW flux from NISTAR measurements and comparison also made with the corresponding results derived from CERES. I am impressed by the detailed and clear description of the algorithms. The paper is very well written and relevant to the community. I recommend publication after addressing the minor issues listed bellowed. It doesn't seem that the uncertainties in the algorithms would give a consistent bias seeing in the differences between NISTAR and CERES. Has there been analysis with the NISTAR instrument measurements and calibration? The low correlation between NISTAR LW flux and that

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of CERES is puzzling. To bypass the potential uncertainties in part of the algorithms, it may be useful to look at the correlation between the NISTAR LW radiances and the CERES flux to see if they are correlated at all.

Specific comments:

Page 5 and 6: The authors have derived the regression equations for the unfiltered radiances (Eq 3 and 4); what is the reason for using the less accurate ratio method (Eq. 5 and 6)?

Page 14: How are the portion of the Earth not visible to NISTAR decided? Also, similar to NISTAR missing some of the daytime portion of the Earth, it must be seeing part of the night time side of the Earth. Are these taking into account for the longwave calculations?

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[Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-214, 2019.](#)

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