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

This paper documents the methodology to derive the broadband radiative flux from the measurements of the NISTAR instrument onboard of the DSCOVR mission. Some preliminary results based on this method are compared with the well-developed CERES data. The SW fluxes derived from the NISTAR compares reasonably well with CERES, but the LW fluxes from NISTAR have a systematic bias and low correlation coefficient when benchmarked with CERES.

The topic of this paper is important and suitable for AMT. The paper is well organized. However, the paper lacks some important technical details about the instrument and the methodology, as well as the author's opinion about the usefulness of the NISTAR product. In my view, some significant revisions are needed before the paper can be accepted for publication. Below is a list of questions and concerns I have.

1) The parameterization scheme described in Section 2 to obtain unfiltered radiance from observed filtered radiance is confusing. Up to line 132, the method seems to be based on the polynomial parameterization scheme in Eqs (3) and (4). But then it suddenly changed to the simply ratio-based parameterization in Eqs. (5) and (6). Why are there two types of parameterization? Which one is used?
2) What is the FOV size of the NISTAR instrument? Does it observe the earth pixel by pixel (similar to EPIC) or as a whole? Does its FOV include some cosmic background and, if so, how is that treated?
3) Within its FOV, does the NISTAR instrument response to the radiance from different locations and angles equally? In other words, do the radiances from the edge of the earth disc have the same weighting as those from the center of the disc?
4) It is stated that "*The biases in the anisotropy correction for the DSCOVR scattering angle are mitigated and potentially minimized by the wide range of different scene 71 types viewed in a given NISTAR measurement.*" Some references are needed to support it.
5) In Su et al. (2018), a similar method is used to derive the fluxes from EPIC measurements. One of the byproduct from this EPIC-based method is the "global day-time mean SW radiance" $\overline{I_{bb}}$. Is it something directly comparable to the observation of NISTAR instrument? If so, some comparisons should be made because both EPIC and NISTAR have the similar sun-satellite geometry.
6) I have several questions about the method described in Section 3c. First of all, what is the theoretical based for Eqs 9~ 11? If my understanding is correct, the global mean SW flux is $F = \iint_{sunlit} \frac{I[\theta_0(r),\theta^e(r),\phi^e(r),\chi(r)]}{R(\theta_0,\theta^e,\phi^e\chi)} d^2r$, where r denotes a point on earth. But this is not equal to $\frac{\iint_{sublit} I[\theta_0(r),\theta^e(r),\phi^e(r),\chi(r)]d^2r}{\iint_{sublit} R(\theta_0,\theta^e,\phi^e\chi)d^2r}$. More detailed mathematically derivations are needed here. Secondly, one might ask if a global mean anisotropic factor is even physically meaningful? The average is over a large range of viewing angles and scene

types. Does the result have any physical meaning? Moreover, are the angular and spectral averaging independent and can be treated independently? The derivations in Section 3c seem to suggest they are independent, but this is not obvious to me. Some clarification is needed.

7) This paper only shows "how to do it" but does not explain "why to do it" other than it can be done. I understand that this paper is to document the method used to derive the flux from the radiance observations of NISTAR. But I think in addition to the technical details the reader would apricate some insights and opinions from the authors about the usefulness of the product. We already have the state-of-the-art CERES flux product and in Su et al. (2018) flux product has also been developed. What is new/novel/important about the NISTAR flux product other than the fact it can be done? What kind of applications can this product be used for? Some discussions about these important questions should be added to the abstract and conclusion parts.