

2nd Review of “Metrology of the Solar Spectral Irradiance at the Top Of Atmosphere in the Near Infrared Measured at Mauna Loa Observatory: The PYR-ILIOS campaign” by Pereira et al.

Summary:

This revision addressed all major issues of the original manuscript and seems to make this publication stronger. That said, clarifications on the added details are recommended before publication.

Remaining issues:

Section 2.5:

- This section could use some refinement in the presentation.
- Point 1 in this section should describe by how far in angular degrees the field of view is ‘flat’ without deviation from the highest transmission value. In other words, describe the supplemental figure that was sent out. The figure does show 1% change in one direction at 0.3°, without finer resolution of this measurement, this detail should be mentioned.
- Point 3 describe the verification of the linearity of the detector, similarly describe, but with a different method in line 21 of p.5. These two descriptions should either be combined and contrasted as it is confusing. From the author’s response, one is a determination of non-linearity, the other is a verification.

Figure 2.:

- Why is the combined relative uncertainty in TOA SSI lower than its governing values, especially at wavelengths lower than 1000nm?

Section 3.6:

- “measured AOD profile”, here what does a ‘profile’ indicate? Vertical profile, or diurnal profile? Please clarify.
- Equation seems to indicate that the Rayleigh optical depth is not time variant, which should be considered if not already.
- Line 12, p.11, “corresponding uncertainty amounts to” It is unclear how the averaged bias values lead to those values of the uncertainty. Additionally, since the values can be both positive and negative, does it make sense to report the root mean square error instead of the average?

Table 1.:

- There are remaining notations of ‘I’ to denote I believe Irradiance instead of the the term ‘E’ used everywhere else in the manuscript.