

Atmos. Meas. Tech. Discuss., referee comment RC2
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Comment on amt-2022-105

Anonymous Referee #1

Referee comment on "Comparison of global UV spectral irradiance measurements between a BTS CCD-array and a Brewer spectroradiometer" by Carmen González et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2022-105-RC2>, 2022

This is a very interesting paper on the performance of the BTS CCD-array spectroradiometer, compared with a Brewer spectroradiometer.

My major comments are related:

- a. With the explanation of the differences / changes of this ratio with wavelength (mainly)
- b. With a conclusion of the measurement uncertainty and accuracy of the Brewer instrument and through this comparison reporting on the uncertainty of the new BTS CCD array

Specific comments

Line 39 maybe also include an OMI related validation publication: Arola et al., A new approach to correct for absorbing aerosols in OMI UV DOI: 10.1029/2009GL041137

Line 62 Probably a reference to the Qasume: Quality assurance of spectral ultraviolet measurements in Europe through the development of a transportable unit (QASUME) DOI: 10.1117/12.468641

Line 115 probably a table mentioning the dates, names, ozone, temperature, cloud comments of the 3 periods could be useful

Line 137 : why have you put the limits for 70 degrees and the cloudless sky ?

Line 145: Kouremeti

Table 1: Variability: is this 1 sigma ?

Section 4.1:

-Is there any idea for the low but obvious drop of the ratio going from 305 to the end of the spectrum (e.g. fig. 3) ?

-Can you comment on the signal to noise ratio for low wavelengths and high solar zenith angles ?

-Is the curvature of the ratios in figure 2 due to the instrument calibration principles/sources ? or is there any other reason involved?

Figure 4c: ratios seems slightly lower than the other periods.

Could you provide an estimation of the Brewer accuracy and uncertainty on deriving UV Index and based on this work to report also on the accuracy and uncertainty of the new instrument ?

An uncertainty estimation of the CCD-array instrument would be very useful for this work.