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Interactive comment on "Adaption of an array spectroradiometer for total ozone column retrieval using direct solar irradiance measurements in the UV spectral range" *by* Ralf Zuber et al.

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The units of $mWm^{-2}nm^{-1}$ of Figure 4 are incorrect by a factor of 1000. The units should be $Wm^{-2}nm^{-1}$, which would mean that the detection limit of the system is about $10^{-4}Wm^{-2}nm^{-1}$. State-of-the-art double-monochromator based scanning spectroradiometers such as QASUME have a detection limit of about $10^{-6}Wm^{-2}nm^{-1}$ and sometimes better, in particular for direct solar measurements where no cosine diffuser with small cosine error is required. Such diffusers tend to attenuate radiation more than entrance optics for direct measurements.

The units of Figure 4 should be corrected and the reasons why the detection limit

is about two orders of magnitude worse than that of QASUME should be discussed. Is the difference due to stray light despite the physical stray light suppression of the BTS2048-UV-S system or because of the short integration times of this system and the resulting photon noise? Below 305 nm, the ratio BTS /QASUME shown in Figure 4 is greatly increasing towards shorter wavelength. This is a clear indication of stray light and might be an indication that the stray light suppression of the BTS via the use of interference filters is inferior to that of the double-monochromator based QASUME system. On the other hand, data of the system shown in Figure 5 of the article "Effective stray light suppression with the BTS2048-UV series array spectroradiometer" published in issue 12 of the Thematic Network for Ultraviolet Measurement (http://metrology.tkk.fi/uvnet/source/UVNews_12.pdf) suggests that the BTS has a detection limit of $10^{-5}Wm^{-2}nm^{-1}$ with no obvious sign for stray light, although judging stray light characteristics on a logarithmic scale can be deceptive.

While the accuracy of measurements below 305 are of little relevance for the ozone retrievals described in the paper, a quantitative assessment of the system's stray light characteristics below this wavelength would be of great interest to gauge the potential suitability of the system and its novel physical stray light suppression method for those solar measurement application that were up to this date the domain of scanning double-monochromator instruments.

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