Referee No.		COMMENTS TO THE AUTHOR(S)	REPLY FROM THE AUTHOR(S)
Anonymous #1	The work describes a portable tunable radiation source for characterization of a UV spectrometer (Dobson and Brewer types) in the field. The operation range is from 300 nm to 350 nm and the claimed uncertainties for the centroid wavelength and spectral bandwidth (FWHM) of the emitted radiation are 0.02 nm and 0.1 nm, respectively. The feasibility of its in-field performance was tested by comparison with the laboratory based measurement and the temporal stability of the source was verified based on the periodic re-calibrations. This work provides a practical solution to increase the accuracy of the UV spectrometer network monitoring total column ozone and the achieved performance is satisfactory.Therefore, I would like to recommend the publication of this work in AMT as soon as the following comments are considered or clarified:		
	1	More detailed information in the device design is wished. The design of the developed source is described in Chapter 2 with Fig. 1 and Fig. 2. The authors explained the components of the device but the information is not sufficient to estimate the expected performance. In particular: focal length of the off-axis parabolic mirrors PM1 and PM2, dimension of the grating, f/# or beam divergence, and the specification of the discharge lamp used (lamp type? power?).	The information requested by referee were added in the Chapter 2 . - *added in line 57 of manuscript:* It consists of a 100 µm input pinhole (IP), a 100 µm output slit vertically oriented (OS), two identical 90° off-axis parabolic mirror 25 mm diameter, 203.2 mm effective focal length (PM1 And PM2) and 3600 grooves/mm grating optimised for a spectral range of interest. Radiation from the input pinhole is collimated by a parabolic mirror and illuminates the grating 25 mm across. The resulting diffracted radiation is focussed by the second parabolic mirror forming a spectrum across the exit slit. The central output wavelength is controlled by the angle of the grating, and the bandwidth by the width of the exit slit. A very small vertical shift in the image at the exit port is associated with the rotation of the grating. This shift is of no consequence to the subsequent use of the instrument other than that an exit pinhole may block some of the radiation as the image moves. Therefore, a vertical oriented exit slit is used instead. The input F/# is F/8.1. The output F/# varies with the wavelength and it ranges from F/11.2 at 300 nm to F/12.8 at 350 nm. The optical fibre coupled high intensity broadband UV discharge lamp (http://www.energetiq.com/fiber-coupled-laser-driven-lightsource-long-life-compact.php) was used as input radiation source. The system was designed such that the FWHM of emitted radiation didn't exceed the value of 0.1 nm for whole spectral range of interest.

2	The uncertainty of the wavelength scale is claimed to be better than 0.02 nm (k = 1 or k = 2 ?) It is however difficult to understand how it was evaluated. In Section 3.1, it states that (page 4, line 106) "the residual differences ... doesn't exceed the value of 0.01 nm over whole spectral range of interest." In addition, repeatability of the wavelength setting is reported to be 0.006 nm (k = 1) and the temperature sensitivity to be 0.007 nm/degC (k = 1). How did these components combined to the final uncertainty of 0.02 nm? When the temperature sensitivity was considerered as an uncertainty component, what was the allowed operation range for the device temperature?	thanks for the comment. To clarify the uncertainty evaluation we made following modifications of MS: *-line 14 of MS:* *We have designed and developed a Tuneable and Portable radiation Source (TuPS) in the wavelength range from 300 nm to 350 nm for the in-field characterization of Dobson and Brewer spectrometers wavelength scale and slit-function with standard uncertainties better than 0.02 nm in wavelength ...* *-line 123-124 of manuscript:* *The evaluation of standard uncertainty of the TuPS wavelength scale is reported in Table 3 in Chapter 6.* *-line 174 of manuscript:* ***6 TuPS temporal stability and wavelength scale uncertainty evaluation*** *-line 186 of manuscript:* *The evaluation of standard uncertainty of the TuPS wavelength scale is reported in Table 3* *-line 280 of manuscript:* *Table 3 was added to the manuscript*
3	The spectral bandwidth of the source is claimed to be "smaller than" 0.1 nm FHMW. However, the measured FWHM in Section 3.2 ranges from 0.12 nm at 305 nm to 0.13 nm at 350 nm, which are all close to but larger than 0.1 nm.	*- text in line 16-17 of manuscript amended:* .. with the bandwidth of emitted radiation smaller than 0,13 nm FWHM.
4	From Fig. 6 and Fig. 10, I presume that the source contains some out-of-band stray components. How big is the spectral purity of the developed source? Is it not an relevant specification for testing UV spectrometers?	During the TuPS characterisation measurement the out-of-band stray radiation was measured at the levels lower than 3.5E-4 relative. This value is negligible for the aplication of Dobson spectrometer characterisation.
5	From the result of the temporal stability in Fig. 11, I would say that the change of the scale in a time scale from 8/2017 to 11/2018 is larger than 0.04 nm. This is much larger than the claimed uncertainty of 0.02 nm. Should the long-term instability (including changes due to shipping and in-field environmental conditions) be included in the uncertainty evaluation?	*This part is actually explained in the original manuscript in lines 112-115:* It is worth noting, that the TuPS wavelength scale is recalibrated before and after each in-field measurement campaign (as we report below) and based on the calibration results the two linear interpolation parameters readjusted. Potential differences are then accounted as a temporal stability uncertainty contribution into uncertainty budget associated with that in-field calibration campaign. To clarify the text in Chapter 6, we have made following changw of the text in lines 178 -179: - Before and after each measurement campaign the TuPS wavelength scale has been recalibrated and re-adjusted in CMI laboratory using the OPO laser facility as describe above (see Chapter 3.1, line 112)