

We would like to thank the reviewer for his valuable comments and suggestions.

*21: Rephrase because as it written now it implies that all instruments (including Brewers) were installed in 1926!*

We will do so, and also add a reference describing the history of the Arosa ozone measurements.

*24: In addition to horizontal, state the vertical displacement of the two stations.*

The LKO Arosa is located at an altitude of 1850 m and PMOD/WRC is located at 1590 m elevation, giving a difference in elevation of 260 m.

*27: In the abstract it is stated that there is a seasonal variability of 1.5%, while here that there a consistency of within 1%. Which of the two is more accurate? Furthermore, in line 87 this number is further reduced to 0.5%.*

The numbers might have been misleading. The 1.5% seasonal variability is seen between colocated Brewer and Dobson spectroradiometers, and has been documented already in 1988 by Kerr et al (reference added to the revised manuscript). The consistency within the Brewers and within the Dobsons is much higher, as documented by the publications by Stübi et al. We will verify these numbers and correct them if necessary in the revised manuscript.

*64: Aerosols and NO<sub>2</sub> also absorb in this range. Although for Davos and Arosa their effect should be negligible, these species should be mentioned for completeness.*

As the reviewer pointed out, the influence of aerosols and NO<sub>2</sub> to the ozone retrieval can be neglected at Davos and Arosa. Nevertheless, we will mention them in the manuscript. We have also added a reference to aerosol optical measurements at Davos which confirm this assumption.

*212: The procedure for determining the error in the total ozone due to the use of different Rayleigh cross sections could be slightly expanded so that inexperienced readers can follow it better. Alternatively, a reference could be provided to improve understanding.*

The influence of the Rayleigh coefficients on the ozone retrieval is explicit in equation 4 on page 3. We will refer to this equation in the Section 2.5 on the Rayleigh coefficient calculation and expand it as suggested by the reviewer.

*238: However, if new Rayleigh cross sections are used, then the calibration of the instrument would change so this offset of about 2.4 DU would be finally compensated.*

The Brewer network currently uses Rayleigh coefficients with unknown origin. When Rayleigh coefficients based on known Rayleigh cross-sections are calculated, an offset of 2.4 DU occur in the ozone, affecting the whole Brewer network. Clearly, this cancels out when Brewers are compared with one another, but when comparing to independent instruments such as Dobson or Satellites this needs to be taken into account.

*315: ECMWF does not provide the effective temperature but the temperature profiles from which the effective temperature can be calculated. Moreover the ozone profiles that are needed for the calculation of  $T_{eff}$  are available from other sources which should be mentioned.*

We agree with the comment of the reviewer concerning our use of the ECMWF effective temperatures. We will add a reference describing how this data-set is produced and update the web-site link where this data can be downloaded.

*343-345: I think this sentence is somewhat misleading. It is not clear what is meant by "precludes their use as common ozone absorption cross-sections". If I understand correctly, the same cross-section can be used in both types of instruments as long as their temperature sensitivity is taken into account for each instrument.*

As suggested by the reviewer, we will reformulate our statement in the conclusion on the inconsistency of some cross-sections when used by the Brewer and Dobson algorithms to make it better understandable. We wanted to make the statement that some cross-sections, like for example DBM, produce a significant offset in the ozone derived by Brewer and Dobson respectively, which indicates that these cross-sections cannot be used when trying to homogenise the measurements of these two networks.

*332: Since a supplement already exists, I suggest to include this figure in the supplement, to demonstrate the difference of the stray-light effect of the single Brewers.*

The stray-light effect of the single brewers has been extensively documented during Brewer comparisons performed during previous RBCC-E campaigns. As suggested by reviewer #2, we will add DOI links to these reports which contain the required information for the single brewers as compared to the double Brewers. We will also modify the manuscript accordingly to refer to these reports. We will also add a figure to the supplement as suggested by the reviewer.

Finally, we will consider all technical comments and adapt the revised manuscript accordingly.