

The authors have taken into account the reviewers comments, which were extremely to the point. There are a number of comments related with technical, statistical and instrumental issues related with the trend results. The issues and questions have been answered.

However I would clarify a bit more the non ozone calibration issue of 1998 and the statistical results, since just looking at the figure it certainly looks like a step change for the ozone. Is there any other source showing (satellite based or neighbouring measurement) this change ?

We investigated the total ozone time series from Brewer measurements at De Bilt and saw the same step change for ozone in the beginning of 1998. Also for this Brewer (#100), there was no change in calibration at this time. So this further excludes any instrumental cause for the observed change point and step change in the Uccle ozone time series.

A sentence has been added to the manuscript to clarify this (at the end of Chapter 4.3.3, page 23, line 5):

“To further exclude an instrumental cause for the step change in the mean of the Uccle ozone time series, we investigated the total ozone time series of De Bilt (The Netherlands; 52,10°N / 5,18°E; data obtained from www.woudc.org). This time series is also characterized by a step change and change point in the beginning of 1998 (March 1998). At that time, there was no change in the calibration constants of the Brewer instrument at De Bilt. This confirms that the change point seen in the Uccle time series must have a natural/environmental cause.”

Ch 4.4.2 already states the following: *“Both the aerosol composition, which determines if a mixture is rather scattering or absorbing, the aerosol amount, and the aerosol size distribution determine whether an increase in τ_{aer} will lead to either an increase or decrease in UV irradiance. At Uccle there is not sufficient information on both parameters to unambiguously characterize the influence of Aerosol Optical Depth on UV irradiance.”*

And can be also stated that aerosol effects on UV in this study are based only on AOD and not aerosol absorption properties changes.

The following sentence has been added to the manuscript (Ch. 4.4.2 - After “At Uccle , there is no information on these parameters, hence it is difficult to unambiguously characterize the influence of τ_{aer} on UV irradiance ”, p 28, line 6):

“The aerosol effects on UV in this study are solely based on τ_{aer} and not on aerosol absorption properties changes.”

P26, L 2-3: "These small particles would enhance the multiple scattering and reflection of UV radiation, which in turn would increase the UV radiation observed at the surface of the Earth." I think this has to be deleted.

This sentence has been deleted from the manuscript.

4.2.3 this is a very good paragraph with a summary of UV changes analyses.

It would be good for future readers to see the works by den Outer, Zerefos and Eleftheratos (cited also in other sections of the paper) which are more or less grouping such initiatives.

The references have been included in the first sentence of section 4.2.1 (page 18, line 5):

“Long term UV trends for different locations around the world have been the subject of many research articles (e.g. den Outer et al. 2000, Zerefos et al. 2012, Eleftheratos et al. 2014, ...) and it is worth checking the consistency of our results with these studies even though the time periods are never exactly the same as the one studied in this paper (1991-2013).”

I suggest the publication of this interesting work after taking into account/clarifying more the above issues.