

Response to Referee #1

We would like to thank the reviewer for carefully reading the revised manuscript and for providing helpful suggestions. You can find below our responses in red after each individual comment:

The revised manuscript has addressed all comments to my satisfaction and from that point of view it can be accepted. However the revised manuscript has an added section 3.5 called "Error Budget", with substantial new information. I have a few comments to this section which I suggest to be considered prior to be accepted for publication:

- The general term that should be used in this context is "Uncertainty budget", not "error budget". The contributions discussed in this section are actually the unknowns, that contribute to the measurement uncertainty. So I recommend in this section and in the whole manuscript were appropriate to use the term "uncertainty", and not "error".

Furthermore, it should be stated if the uncertainties quoted in this section and also in Table 2 represent standard uncertainties or expanded uncertainties, and for which coverage probability interval they are applicable.

We thank the reviewer for this remark. We agree that the term "uncertainty budget" is more appropriate in this context instead of "error budget". We have updated Sect. 3.5 and revised the terminology throughout the manuscript accordingly, as suggested.

In addition, Sect. 3.5 has been further revised as follows:

- In the previous version, the analysis was formulated in terms of errors. These values have now been revised and expressed as uncertainties
- We now state that the reported values represent standard uncertainties, corresponding to a coverage probability of approximately 68%
- The criterion used to distinguish between low and high absorption conditions has been revised. Instead of the previously used threshold of 1000 DU, which was arbitrarily selected, we now adopt a threshold of 700 DU (corresponding to the mean O₃ SCD of the dataset). The reported SCD fitting uncertainties have been slightly updated
- Table 2 has been slightly reformatted to improve readability: low and high absorption conditions are now presented in separate rows rather than in the previous compact "low (high)" format
- Minor wording improvements have been implemented

Response to Referee #2

We would like to thank the reviewer for carefully reading the revised manuscript and for providing a positive evaluation. You can find below our response in red.

I recomiendo to publish as is

There is no further comment from the authors.