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Atmospheric Measurement Techniques Discussions

Interactive comment on "A new photometric ozone reference in the Huggins bands: the absolute ozone absorption cross section at the 325 nm HeCd laser wavelength" *by* Christof Janssen et al.

Anonymous Referee #2

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General comments: The purpose of the manuscript concerns "a new photometric ozone reference in the Huggins bands: the absolute ozone absorption cross section at the 325 nm HeCd laser wavelength". The manuscript is well written in a concise way. The state of art for the ozone absorption cross section measurements during the last three decades is very well documented. The authors explain the need for the atmospheric community to have very precise ozone absorption cross sections in the UV range as this region is widely used for remote and in-situ measurements of atmospheric ozone concentration. The focus on the 325 nm HeCd laser wavelength allows a new precise and absolute measurement of ozone absorption cross section at room temperature. As ozone is an unstable gas, many factors may affect the purity and the decom-

position of the studied sample. So the experimental setup and methodology are clearly detailed in order to control the ozone sample during all the measurements. Throughout the manuscript, particular attention is paid to the determination of uncertainty budget and all possible instrumental biases. This very precise and detailed experimental work and the used method (fitting model and linear regression) to analyze the data, lead to a new measurement of the ozone absolute absorption cross section at 325 nm of high quality. This new cross section value suggests that absorption spectra used for atmospheric remote sensing of ozone possibly need to be revised as the obtained value is about 2% lower than the previous ones. This is of high interest for the atmospheric community. Moreover, this new value can also be used to calibrate existing and future cross section data. Conclusion: I highly recommend this manuscript for publication.

Specific comments: No specific comments

Technical errors: None

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