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Atmospheric Measurement Techniques Discussions

Interactive comment on "Cloud screening and quality control algorithm for star photometer data: assessment with lidar measurements and with all-sky-images" *by* D. Pérez-Ramírez et al.

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Answer to Reviewer #2

The authors greatly acknowledge the anonymous reviewer for carefully reading the manuscript and providing highly positive comments on the manuscript.

We think that the manuscript will be improved with Reviewer #2 comments and suggestions. In particular, we agree with the referee on his comment on ozone satellite data. The ozone content is obtained from OMI instrument on board of AURA satellite (http://aura.gsfc.nasa.gov/instruments/omi.html).

We also agree with the referee on his comments on the availability of more accurate values of NO2 content from satellite measurements. Nevertheless, our previous publication (Pérez-Ramírez et al., 2011) supports the choice of a fixed value for NO2 content in our previous results. In this work the uncertainties in the aerosol optical depth retrieved for the star photometer used in this work were computed. These uncertainties are 0.02 for λ<800 nm and 0.01 for λ>800nm. The computations carried out changing the NO2 content by 50% revealed that the uncertainty in the optical depth due to NO2 was one order of magnitude lower than the uncertainty associated with the aerosol optical depth. In this way the use of a fixed value for NO2 content affects in negligible way the final aerosol optical depth retrieval, while the use of a fixed NO2 content make the computation straightforward.

We would like also to note that AERONET network uses also fixed NO2 content for their retrieval in the city of GRANADA. These values are 0.000156, 0.000151, 0.000160, 0.000184, 0.000176, 0.000206, 0.000198, 0.000198, 0.000178, 0.000153, 0.000168, 0.000162 from January-December, being their mean value 0.00017 equal to the value we propose in this work.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 1657, 2012.