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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Aerosol Single Scattering Albedo retrieval in the UV range: an application to OMI satellite validation" *by* I. Ialongo et al.

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The authors would express thanks to the Referee #1 for positive and constructive comments.

REFEREE "One weak point which should be addressed is that no recommendations as to the procedure to be chosen are made. At least a more thorough discussion, why this eventually is not possible should be included."

AUTHORS Page 19021 Line 22: The following sentence will be included in the conclusions: "The lowest averaged bias was obtained using method 3, which could be suggested as a proper correction procedure. On the other hand, method 2 produced better results at higher SZAs where the effect of the absorbing aerosols may lead to

higher UV attenuation due to the increased optical path. Anyway, it is out of scope of this work to choose the best correction to be used. This still requires additional validation studies.".

R "P. 19013 line 8: A correction is made to the erythemal action spectrum to include irradiance of 325 – 400 nm band. The erythemal action spectrum is used to weight the spectral irradiance before integration. Here spectral irradiance from 325 to 400 nm is missing. How can the erythemal action spectrum be corrected? Are you increasing the multiplication factor at some wavelengths in order to take into account the missing wavelength range? This needs some more explanation. Please specify what you exactly mean."

A P. 19013 Line 8: The statement "A correction is made to the erythemal action spectrum to include irradiance of 325-400 nm band." will be replaced in the revised manuscript as follows:

"The UV irradiances at wavelengths longer than 325 nm, are extended up to 400 nm by the Brewer algorithm that applies weighting coefficients to the irradiance at 324 nm in order to take into account the missing wavelength UV band (Fioletov et al., 2004). The algorithm was developed by Finnish Meteorological Institute (FMI) based on a comparison of synchronous spectral measurements of full range (UVA and UVB) and short range (325-365nm) instruments during the CAMSSUM-95 campaign in Ispra, May-June 1995 (Tapani Koskela, FMI Helsinki, personal communication)."

Fioletov, V. E., M. G. Kimlin, N. Krotkov, L. J. B. McArthur, J. B. Kerr, D. I. Wardle, J. R. Herman, R. Meltzer, T. W. Mathews, and J. Kaurola (2004), UV index climatology over the United States and Canada from ground-based and satellite estimates, J. Geophys. Res., 109, D22308, doi:10.1029/2004JD004820.

R P. 19014, line 9: OMI products consist in . . .. => OMI products consist of column ozone, aerosols, clouds. . .. Or OMI products include column ozone. . ..

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P. 19015, line 12: “FWHM = 0.63 nm”. => “with a FWHM of 0.63 nm”

P. 19015, line 20: “According to Tanskanen” => “Following the procedure of Tanskanen”

P. 19017, line 8: “ The dispersion on SSA” Please replace the word “dispersion” Or at least replace “dispersion on” by dispersion of”

P. 19019, line 2: “ was applied at” => “was applied to”

P. 19019, line 4: “ The corrected OMI UV irradiances at 324.1 nm. . .. using the retrieved by means. . ..”: a word is missing after “retrieved”

P. 19020, line 10: “acount” => “account”

P. 19020, line 10: “descreasing” => “decreasing”

P. 19021, line 3: “The AAODs have been derived. . .. from January 2005 to June 2008.” C6148 =>“The AAODs were derived. . .. from January 2005 to June 2008.”

P. 19021, line 17: “..led to an improvements..” => “..led to an improvement..”

A All these sentences will be corrected in the revised manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 19009, 2009.