Atmos. Meas. Tech. Discuss.,
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Atmospheric Measurement Techniques Discussions

Interactive comment on "Synoptic Ozone, Cloud Reflectivity, and Erythemal Irradiance from Sunrise to Sunset for the Whole Earth as viewed by the DSCOVR spacecraft from Lagrange-1" *by* Jay Herman et al.

Anonymous Referee #2

Received and published: 9 October 2017

The manuscript by Herman et al. describes the retrieval of ozone, cloud reflectivity, and erythemal irradiance from earth radiances measured by the EPIC instrument aboard the DSCOVR spacecraft. The paper describes in detail the retrieval of each quantity and is thus a valuable archive for end users of these products. It fits very well within the scope of AMT. General comments: The manuscript is a good resource for understanding the product retrieval from EPIC measurements. The examples of EPIC ozone and erythemal irradiance retrievals are unique and highly interesting. In my opinion the manuscript would benefit from amending the abstract and introduction with some more

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context on the EPIC instrument, e.g. first of its kind? How do its products differ from and/or complement LEO satellites? Also highlighting the value of EPIC measurements for the general public (UV index – is this passed on? Published anywhere else?) would be an interesting addition.

The strictly technical tone of the manuscript makes it a bit hard to read at times. Shortening some sentences would help. Overall this paper is well suited for AMT and I recommend publication.

Specific comments: Abstract: Please include explanations of abbreviations in the abstract

p.4, line 114ff: This paragraph fits better further up in the introduction.

p.5, line 187: How can errors cancel each other out? Please explain.

p.10, line 335: Any ideas where these difference come from?

F01: air and vacuum WL in same Figure is confusing

F11: change red trace to grey/black or explain

Technical corrections:

p.1, line 9: I assume the radiances are received at the antenna in Virginia, but the derived quantities are processed elsewhere – please clarify sentence. p.2, line 33: orbit around

p.2, line 36: optimized

p.2, line 62: or over ice

p.3, line 85: 10 wavelength

p.3, line 85: at slightly

p.4, line 120: and are not

p.5, line 158: result in large

p.5, line168: correction of less

p.5, Eq. 9: for consistency, please explain omega

p.9, line 278: is shown

Section 6: several inconsistencies in use of capital “E” or not in erythemal

p.15, line 510: ensure

p.24, line 641: their

p.24, line 644: 6 months

Formatting does not fit yet AMT style

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