Additional Editor Comments:

Line 18. This statement implies that the Absorbing Aerosol Index (AAI) detects aerosols beneath clouds. That is incorrect. The AAI can detect UV-absorbing aerosols mixed with clouds but not beneath clouds. The AAI also detects UV-absorbing aerosols above bright backgrounds such as snow/ ice covered surfaces, or above cloud decks. This is amply documented in the literature [Herman et al., 1997; Torres et al., 1998].

Line 62. Provide references for the UV-absorption technique that has been applied to multiple sensors: TOMS (on Nimbus-7 and Earth Probe platforms, Torres et al 2002), and currently applied to OMI on Aura platform (Torres et al., 2007), EPIC on DSCOVR satellite (Ahn et al, 21), and TROPOMI on Sentinel5-P (Torres et al., 2020). There are many instances or unresolved acronyms such as TOMS (Total Ozone Mapping Spectrometer) and others.

Line 68. Add reference for the NASA TROPOMI aerosol product (Torres et al., 2020).

Line 76. The earliest analysis of this type was carried out by Prospero et al (2002) based on TOMS data.

Line 196. Be consistent in the naming of the sub-sections 2.2.1 through 2.2.4. Currently 2.2.1 refers to satellite, 2.2.2 to the sensor, while2.2.3 and 2.2.4 refer again to the satellite. I suggest using hyphenated sensor-satellites such as MODIS-TERRA/AQUA, TROPOMI/S5P, etc.

Line 216. Clarify that the UVAI method that detects aerosol mixed with clouds and above cloud-layers is only a qualitative measurement. In the last twenty years, however, accurate approaches to derive quantitative information such as aerosol optical depth and single scattering albedo of smoke and dust aerosols for cloud-free conditions (Torres et al, 2002, 2007; Ahn et al, 2021) and above clouds from UV (Torres et al., 2012) and visible observations (Jethva et al., 2013) have been developed.

Line 268. Revisit Table 1. I suggest including five columns: Sensor, Satellite, Product, Threshold, Reference.

Line 488. Replace cloud cover with sub-pixel cloud contamination

Cited references:

Ahn, C., Torres, O., Jethva, H., Tiruchirapalli, R., & Huang, L.-K. (2021). Evaluation of aerosol properties observed by DSCOVR/EPIC instrument from the Earth-Sun Lagrange 1 Orbit.

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Herman, J.R., P.K. Bhartia, O. Torres, C.Hsu , C. Seftor, and E. Celarier, Global Distribution of UV-absorbing Aerosols From Nimbus-7/TOMS data*, J. Geophys. Res.*, 102, 16911-16922, 1997

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Prospero, J.M., P.Ginoux, O. Torres, and S.E. Nicholson, Environmental characterization of atmospheric soil dust derived from the Nimbus-7 TOMS absorbing aerosol product, *Reviews of Geophysics*, 10.129/2000RG000095, Sept 4, 2002

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Jethva, H., O. Torres, L. A. Remer, and P. K. Bhartia (2013), A color ratio method for simultaneous retrieval of aerosol and cloud optical thickness of above-cloud absorbing aerosols from passive sensors: Application to MODIS measurements, IEEE Trans. Geosci. Remote Sens., 51(7), 3862–3870, doi:10.1109/TGRS.2012.2230008.