

Atmos. Chem. Phys. Discuss., referee comment RC1
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Comment on acp-2021-521

Anonymous Referee #1

Referee comment on "Global maps of aerosol single scattering albedo using combined CERES-MODIS retrieval" by Archana Devi and Sreedharan K. Satheesh, Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-521-RC1>, 2021

Single scattering albedo (SSA) is a very important parameter in assessing the radiative impact of aerosols and on which there is meager data globally. The paper is a welcome addition to the aerosol literature in this regard. The authors have made use of satellite data of CERES and MODIS in obtaining global maps of SSA based on the concept of critical optical depth. They have presented the maps for different seasons as well considering a four year period. It is hoped such maps will be generated on annual basis subject to sufficient data availability.

The authors made a very clear presentation of the method of analysis including the error estimates. On the whole the paper will be a very important contribution to the area of aerosol radiative impact.

Specific comments/suggestions:

- As described in the paper, the surface albedo is an important parameter in the SSA estimation. So the surface albedo maps for different seasons also should be given as in Fig 5 along with similar data for different seasons and regions in Table 1. This would greatly help in the discussion of the results.
- A brief description of the aerosol models used in the RT calculations should also be given.

Minor: Page 13, line 8 from top: the value is 0.83 and not 0.81 (Table 1)