

Interactive comment on “Assessment of Regional Aerosol Radiative Effects under SWAAMI Campaign – PART 2: Clear-sky Direct Shortwave Radiative Forcing using Multi-year Assimilated Data” by Harshavardhana Sunil Pathak et al.

Anonymous Referee #1

Received and published: 27 June 2020

The manuscript is part-2 of their work. In the first part, they have presented the gridded, assimilated datasets of AOD and SSA over the Indian region, which provide spatio-temporally continuous measurements from a dense network of ground-based aerosol observatories and multi-satellite datasets. These resulting improvement inaccuracies of the gridded products in reproducing the Spatio-temporal characteristics of aerosol properties at sub-regional scales over the Indian domain. In this second part, the team has estimated direct shortwave ARF over the region. Also, a comparison of these estimates is made with similar estimates made using the parent satellite data to demon-

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strate the effectiveness of the assimilated data. Further, they have compared the TOA radiances estimated using the assimilated data with the radiance values measured by the CERES instrument, and the seasonal contrast in ARF is then presented for various geographically homogeneous sub-regions. Overall this is excellent work with clear objectives and good scientific presentation; however, it needs some attention to improve the presentation. I am listing below some specific suggestions

Title of the manuscript: The manuscript title needs to be clear to understand the readers. At present, it is not clear the region where they have conducted the study. Authors have included the campaign name (SWAAMI), but that also abbreviation and not mention even full in abstract.

Figure captions: I can also recommend to include more details (e.g., study region, abbreviations) in most of the figure captions. There are many abbreviations, and some places short information so hard to read for general readers.

Specific comments follow. Page 3, Line 13-17: I think authors want to say section 4 rather than section 3. Instead, I can suggest removing the name of sections (i.e., section 3.1, section 3.2, and section 3.3) as it is understandable that included in the result and discussion.

Page 4, lines 6-7, which figure?

Page 4, line 7-12, please add references to support

Page 4, line 12, again which figure?

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-454>, 2020.

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