

Interactive comment on “Remote sensing of aerosols by using polarized, directional and spectral measurements within the A-Train: the PARASOL mission” by D. Tanré et al.

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We are grateful to the reviewer for useful comments. Our answers are given below.

General comments : (1) We added a paragraph to section 2 with references concerning polarization observations. (2) Detailed informations on the POLDER instrument is available in Deschamps et al. (1994) as referred in the paper ; nevertheless we now provide key informations (spatial/temporal characteristic) as requested by the reviewer. (3) We have extended somehow the discussion on the aerosol time and spatial evolutions (figures 1 and 2) ; let us remind to the reviewer that the objective of our paper is not to bring new aerosol climatology. (4) We tried to improve the language by considering

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the comments of both reviewers.

Answers to main specific comments: (1) P2048, line 2 : references are provided. (2) Figure 1 : we cannot provide only seasonal means of the AOD since the evolution from year to year is discussed. Legends and color scales have been removed to save space and increase the size of the figure. (3) Figure 2 has been redone. (4) Figure 4 has been changed to avoid duplication with the figure in Dubovik et al. (2011). (5) The meaning of the acronyms is given at first appearance.

We have accepted all other specific comments in the revised paper except : (1) the one on p.2045 - validation : since PARASOL is based on POLDER heritage, we think that previous validation results are relevant. Results from Bréon et al. (2010) are detailed enough for not duplicating them in our study. (2) the one on p.2050 - line 3 : although suggested, a flow chart is not provided. We provide details on algorithms in section 3. We agree with the reviewer that the sentence was not clear and we remove the reference to LUT.

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