

Interactive
Comment

Interactive comment on “Spatio-temporal aerosol optical characteristics over the Arabian Sea during the pre monsoon season” by D. G. Kaskaoutis et al.

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Received and published: 7 January 2010

The paper present results on aerosol optical depth and Angstrom exponent derived over the Arabian Sea during premonsoon season of March-May 2006.

Major comments:

The cruise based sunphotometer measurements were made at specific locations during day time, or in other words they correspond to measurements made at point locations.

Please note that most of the results in this manuscript have already been published

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by the authors in Kalapureddy and Devara (AE, 2008) and Kalapureddy et al. (JGR, 2009).

The measurements were made over both Bay of Bengal and Arabian Sea, interestingly only results obtained over the Arabian Sea are re-reported!

Mean AOD values differ between AE and ACPD - mean AOD over AS during the same cruise is written as 0.23 ± 0.09 in AE, 2008, while in the present manuscript (ACPD) the mean AOD at the same wavelength (500 nm) is written as 0.246 ± 0.114 - why there is a difference, if the same data sets were used?

The inferences drawn based on the curvatures differ among the publications, indicating that the authors are not clear about the theoretical concepts on the curvature effects. For example, in the abstract of AE, 2008 the authors Kalapureddy and Devara mention that coarse mode particles dominated over the Arabian Sea thereby gave rise to negative curvature. But, on the contrary, in ACPD manuscript the authors mention that "coarse mode represents positive curvature (lines 5-10)".

Page 22249, line 6 - the authors mention that "In the majority of the cases a_2 was negative, ..." On the contrary in their JGR paper (Figure 11), and AE (Figure 6a) most of the a_2 is greater than zero! - why?

Figure 5b in ACPD is already published as Figure 12 in their JGR paper. Also, it be noted that some points above zero which present in Figure 12 are missing in Figure 5b of ACPD.

Further, Figure 7 of ACPD is drawn already as Figures 3 and 4 in JGR.

In Figure 10 most a_2 values are negative, while in their JGR paper (Figure 9) most a_2 values are positive. Why this difference? Also, a_1 values is much more negative in ACPD (Figure 10a) while in their JGR paper maximum a_1 is -2.0.

Figure 12 in ACPD are the same as Figure 8 except that it is at 500 nm. This kind of figure is not correct as the measurements was obtained at certain locations and not

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over the Arabian Sea as shown in Figure 12.

Figure 13 is the same as Figure 9.

Figure 14 is the same as Figure 10. Both Figures 13 and 14 can't be plotted for the reason that they are point measurements.

Figure 15 is the same as Figure 10.

Only major comments are described. Keeping in mind that (a) most of the results are not new, (b) have already been published, and that (c) most of the figures in ACPD are repetitions from the same paper, this manuscript does not warrant a publication in ACP in its current form.

References:

Kalapureddy, M.C.R., and Devara, P.C.S.: Characterization of aerosols over oceanic regions around India during pre-monsoon 2006, *Atmos. Environ.*, 42, 6816–6827, doi:10.1016/j.atmosenv.2008.05.022, 2008.

Kalapureddy, M.C.R., Kaskaoutis, D.G., Raj, P.E., Devara, P.C.S., Kambezidis, H.D., Kosmopoulos, P.G., and Nastos, P.T.: Identification of aerosol type over the Arabian Sea in the premonsoon season during the Integrated Campaign for Aerosols, Gases and Radiation Budget (ICARB), *J. Geophys. Res.*, 114, D17203, doi:10.1029/2009JD011826, 2009.

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 9, 22223, 2009.

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