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Atmospheric Chemistry and Physics Discussions

Interactive comment on "A reanalysis of MODIS fine mode fraction over ocean using OMI and daily GOCART simulations" *by* T. A. Jones and S. A. Christopher

Anonymous Referee #1

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Review of "A reanalysis of MODIS fine mode fraction over ocean using OMI and daily GOCART simulations" by T.A. Jones et al, submitted for possible publication to A.C.P.

In this paper, the author use estimates of the Fine Mode Fraction (FMF) from MODIS in combination with simulations from the GOCART model to estimate the typical FMF for various aerosol types. They also analyze Aerosol Indices from the OMI instrument that provide indication on the aerosol absorption. The GOCART simulations are used to identify areas where a given aerosol type is clearly dominant, so that the MODIS and OMI parameters can be interpreted as representative of the given aerosol type. This is an interesting study, with significant applications since the fine mode fraction is used for

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an estimate of the anthropogenic component of the aerosol. The study is very clearly presented. The interpretation does flow naturally from the data. The uncertainties are well stated and discussed. There is no doubt that this manuscript should be published with very limited corrections. I have just a few minor suggestions for correction:

Intro, line 10. Re is not defined. I assume it stands for “effective”. However, the effective is for an average over a size range. I believe it is not appropriate here.

2.2 MODIS, line 4. “The greatest uncertainty in to and FMF”. Could be more precise as the absolute accuracy in to, in term of absolute values, is for small to. P29781, line 2. on => one P29782, line 6: as => at Section 4.3 is not really relevant to the study and could be removed. Fig 4b (which could be removed according to previous comment). Explain why the values appear discrete.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 29773, 2010.