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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Urban Visible/SWIR surface reflectance ratios from satellite and sun photometer measurements in Mexico City" *by* A. D. de Almeida Castanho et al.

Anonymous Referee #1

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Comments.

I believe this paper is important and of high quality. The need to understand how to improve upon the operational MODIS aerosol retrieval over urban areas is extremely important and the authors present a viable approach to the refinement of the surface reflectance using sunphotometer measurments to "derive" a surface albedo.

Several questions the authors might consider include:

1) How does the retrieved albedo compare to the MODIS BRDF product as well as the surface albedo derived in collect 5 ?

2) As quoted in the conclusions to the paper, "This variability of the ratio at 1.5 km resolution is significant enough to increase the uncertainties in the tau_a values retrieved from satellite at the higher spatial resolution. Therefore, a surface ratio function would need to be defined to represent the large heterogeneity of an urban area if tau_a is to be derived from MODIS at 1.5 km resolution"

However, their figure 4 seems to indicate a fairly stable correlation coefficient in 4 of the 5 areas while thew 5th area is quite different so it would seem possible to at least carry out the optical depth measurements at 1.5km using these different reflectiion models and observe any improvements.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 8113, 2007.