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Interactive comment on "Evidence of systematic errors in SCIAMACHY-observed CO_2 due to aerosols" *by* S. Houweling et al.

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We received some additional remarks and comments from an anonymous referee. For technical reasons they are posted here as an 'Editor Comment'.

Referee comments:

"*This paper is very valuable accessing the systematic errors of CO2 observation due to aerosols, which is a common problem to be solved in future satellite observations and data use. The contents are fairly well explained and discussed.*

There are some points which will recommend to be considered.

i) About the discussion at the right part of page 6. Why the overestimation of CO2 over Middle East to China is not so large as North Africa? It is probably due to smaller albedo there although the aerosol density judging from Fig.1 is similar. Isn't it better to explain more about Fig.5 (a), and notify that not only the aerosol intensity but the combination with albedo is important?

ii) Nothing is written about the discrimination between aerosol and cirrus cloud, which is difficult by normal cloud contamination analysis. Is there no possibility of cirrus cloud over North Africa?

iii) Why there is no data over ocean near Sahara desert? The signal from surface reflection at 1.6 micron is close to zero, and only the aerosol path radiance part is observed over ocean. If there are data over ocean, the consistency of (AOD + aerosol height -> radiation transfer) and the CO2 retrieval results can be checked. If not, it is better to be explained in the section of "Method". This information appears only at the later part, but it is not clear whether it is not available from instrumental reason or simply data right now is not available."

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 3313, 2005.