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Atmospheric Chemistry and Physics Discussions

Interactive comment on "SAWA experiment – properties of mineral dust aerosol as seen by synergic lidar and sun-photometer measurements" *by* A. E. Kardas et al.

Anonymous Referee #2

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The paper describes remote sensing measurements by a lidar and a sunphotometer conducted during an African dust event that reached Poland in spring 2005. These kinds of episodes are rather frequent and their analysis presents an interest from the geochemical point of view. However, the authors focus their analysis on the methodology of retrieving aerosol optical and micro-physical properties from their dataset. I have the feeling that this kind of analysis should be more appropriated for other kind of journals. Having said that, I am not an expert on lidar retrievals, so I cannot really comment on the robustness or scientific soundness of the method that the authors used. However, I would recommend them to check their hypothesis, as there are some errors. Referee #1 has pointed out to those in his/her review. Beside, the coupling

of lidar sunphotometer measurements has been used in the past (e.g. Welton et al. 2000), so the authors should be careful when saying that they propose it.

For these reasons, I am sorry to agree with Referee #1 in saying that paper should be rejected. I recommend the authors revise this manuscript by expanding the results and discussion sections by comparing with the published body of observations on mineral dust transport over Europe, but also with concurrent observations at the time of their measurements (e.g. AERONET stations). I would recommend the authors to check for satellite images to identify the origin of the dust plume. The source attribution based on NAAPS forecast is rather poor.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 12155, 2006.