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## ***Interactive comment on “Sensitivity study on polarized aerosol retrievals of PARASOL in Beijing and Kanpur” by X. F. Gu et al.***

**Anonymous Referee #1**

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This paper performs some analyses and performances studies for the aerosol retrieval based on PARASOL multidirectional measurements. It includes a comparison against AERONET measurements over two sites, which indicates that the satellite product is highly correlated with the fine mode AOD. It is not clear whether the authors have used the quality index as recommended.

The rest of the paper is very confusing. Although I do have a lot of experience with the PARASOL data, I have not been able to understand what is really being done. For instance, in section 4.3, the authors conclude that the surface polarization model that is used for the operational algorithm generates overestimates, but it does not seem that the authors have used any polarized reflectance data. It is then hard to understand

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what is really done here. Similarly, there is a section that analyzes how the polarized reflectance changes with a “cutoff” threshold. The authors comment that there are variations and conclude that a cutoff at  $035\text{ }\mu\text{m}$  is appropriate. I notice that the author never use the fact that Parasol is a multidirectional instrument but, anyway, I cannot understand their reasoning for their conclusion Despite my experience with the PARASOL data and the aerosol retrieval with its measurements, I cannot understand what has been done, and have therefore no use of this paper result. I assume it would be even worse for a broader community that does not have the same experience with polarization data. As a consequence, I can only recommend this paper to be rejected.

A few years back, I would have provided a more detailed analysis. I have now less patience in reviewing paper that should have gone through an internal review process before submission.

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Interactive comment on *Atmos. Meas. Tech. Discuss.*, 4, 5773, 2011.

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