**Atmospheric
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Comment

Interactive comment on "Variability of aerosol properties over Eastern Europe observed from ground and satellites in the period from 2003 to 2011" *by* A. Bovchaliuk et al.

Anonymous Referee #2

Received and published: 11 March 2013

This is a rather technical "regional" paper normally appropriate for a journal like "Atmospheric Environment". However, comparisons of AERONET and POLDER retrievals contribute to the general theme of improving satellite retrieval algorithms and global satellite climatologies of aerosol properties, thereby making the manuscript appropriate for ACP. Overall, this is a solid contribution worthy of publication after a relatively minor revision.

The first referee has made several good suggestions for improvement. To those I would add just a few points.

1. Abstract. The last sentence should be made more specific in terms of what has

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actually been found out.

2. Figure 5. Please give the corresponding STD and/or RSTD values for the POLDER vs. AERONET AOT comparisons and comment on the magnitude of those values.

3. Final paragraph of Section 4. Please comment more specifically on the quantitative comparison of AERONET and POLDER SSAs. Is the agreement adequate from the standpoint of aerosol radiative forcing estimates or needs to be better?

4. In general, how do the reported POLDER–AERONET comparisons fit the framework of requisite satellite-retrieval accuracies formulated in

Mishchenko, M. I., B. Cairns, J. E. Hansen, L. D. Travis, R. Burg, Y. J. Kaufman, J. V. Martins, and E. P. Shettle, 2004: Monitoring of aerosol forcing of climate from space: analysis of measurement r equirements, J. Quant. Spectrosc. Radiat. Transfer 88, 149-161.

5. The English is generally good but could benefit from another iteration.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 2641, 2013.

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