

Interactive
Comment

***Interactive comment on* “Estimation of aerosol water and chemical composition from AERONET at Cabauw, the Netherlands” by A. J. van Beelen et al.**

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Dear editorial board of ACP,

We thank both reviewers for the interesting comments we have received on our article. Major issues which arose and have been addressed concern the backfilling of AERONET level 2.0 data with 1.5 data (reviewer 1) and the treatment of coarse mode aerosol and the validation/comparison procedure (reviewer 2). We have included the backfilled L2.0 AERONET data in our analysis. We have clarified the way the coarse mode is described and extended the justification for the neglect of sea salt and dust

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in this study. A few plots and a table with statistics have been added to the revised manuscript to improve the comparison with surface observational data. Furthermore, we have made a few small changes to our model in order to improve the consistency with the AERONET retrievals. We have implemented the T-Matrix software described in Dubovik et al. (2006) which includes the AERONET (non-) spherical fraction in our optimization. We have calculated columnar relative humidity (RH) by averaging the water vapor pressure and temperature from instead of relative humidity directly. This did not lead to significant changes in our results. Individual reviewer comments will be addressed separately in the following sections.

Sincerely,

Arjan van Beelen, on behalf of the coauthors.

NB: the full review response is presented in the supplement.

Please also note the supplement to this comment:

<http://www.atmos-chem-phys-discuss.net/13/C8503/2013/acpd-13-C8503-2013-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 15191, 2013.

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