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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Simulation of aerosol optical properties over Europe with a 3-Dsize-resolved aerosol model: comparisons with AERONET data" *by* M. Tombette et al.

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First, the authors would like to thank the reviewers for their useful comments. As both reviewers seem to point out the same features and weaknesses for our paper, we answer to all points in this response.

The general critics of the reviewers are: 1.model-to-data comparisons of AOT are basic results and cannot be presented alone, unless it is presented in a 'technical note' (option 1 of reviewer 2). 2.the sensitivity of AOT and SSA to the particle and mixing structure is incomplete and sensitivity to parameters of the aerosol model itself is much more interesting to document for the community using CTMs (option 2 of reviewer 2, also cited by reviewer 1). 3.Comparisons to other data from another measurement type

like lidar could have been done.

The present paper will be rewritten and completed in order to satisfy the points 1. and 2. quoted below. The description of the optical model itself will be shortened (part of the option 1 of reviewer 2). The sensitivity analysis will be completed to account for a large number of parameters of the aerosol model: number of bins, parameterizations for aqueous chemistry, model for organic species and other physical parameterizations.

To answer to point 3, comparisons with lidar data will be done in a separated study at urban scale, together with a detailed chemical evaluation.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 1321, 2008.