

Interactive comment on “An alternative method estimating hygroscopic growth factor of aerosol light scattering coefficient: a case study in an urban area of Guangzhou, South China” by Z. J. Lin et al.

Anonymous Referee #1

Received and published: 6 February 2014

The paper presents a useful alternative method to estimate the hygroscopic growth factor of aerosol light scattering coefficient. The paper is well written. A key step of the method is to reconstruct the chemical composition of the measured aerosol samples using the equilibrium model ISOPPPORIA II. For validation, the developed formula of $f_{sp}(RH)$ was applied to correct the long-term records of measured bsp from the values under comparative dry conditions to the ones under ambient RH conditions. Compared with the original bsp data, the $f(RH)$ -corrected bsp had a higher linear correlation with and a smaller discrepancy from the bsp data derived directly from visibility and absorp-

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tion measurements. The results look credible. I recommend publication of the paper after the authors address the following questions and comments.

(1) How sensitive are the results to changes in the composition of aerosols and to changes of RH? (2) There is a need to give an assessment of the uncertainty due to potential errors in the calculated chemical species of aerosols. (3) Give a better account of the accuracy of the equilibrium model ISOPPPORIA II. How does it compared to other models?

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 435, 2014.