

Interactive comment on “Particle number size distributions in urban air before and after volatilisation” by W. Birmili et al.

Anonymous Referee #1

Received and published: 16 April 2009

In this manuscript results from a two-year measurement campaign in Augsburg/Germany are reported. The particle size distribution has been measured with SMPS and APS with and without a thermodenuder, to remove the volatile fraction. The influence of season, day of the week, diurnal variations, wind direction and mixed layer height on size distributions and volatile fraction are investigated. The paper is clearly written, length, figures and so on are mainly adequate (see some minor remarks later). Similar data from many other places have been published earlier; a number of papers are cited in this manuscript. When reading the paper it is not really clear, what is new, except that the data are from Augsburg and perhaps that not many data over such a long period exist. As mentioned by the authors, most results have previously been observed in other cities. The authors argue in the introduction that the data are of importance because they can be used in the KORA platform; however, in this manuscript

C235

no further relation to this platform and the use of the data for the purpose of KORA is made.

Some minor remarks: In the description of the experimental setup aethalometer and TEOM are also mentioned, however, no data are shown. Page 8, bottom: by assuming a certain density, aerodynamic diameters are converted to mobility diameters, not to electromobility diameters Page 16: I agree that the co-variations over 7 days clearly indicate anthropogenic contributions; however, this cannot be used as a measure for the ‘intensity’ of anthropogenic contributions. Which experimental results indicate that the 10 to 30 nm particles originate ‘overwhelmingly from photochemical processes’? Fig. 13: The assignment of trajectory number to color in the graph is not clear for all trajectories; I did not find Trajectory 8.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 9171, 2009.