**Atmospheric
Chemistry
and Physics
Discussions**

Interactive
Comment

Interactive comment on "Aerosol hygroscopicity at Ispra EMEP-GAW station" *by* M. Adam et al.

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Received and published: 28 February 2012

We agree with the comment posted by S. Otto. Aerosol scattering, absorption, extinction and backscattering are indeed proportional to dN/dlogDp * ξ * Dp * dDp, with ξ = efficiency. Note that in the manuscript, N actually stands for dN/dlogDp. In order to avoid the confusion we will define n=dN/dlogDp (as in "Atmospheric particles" edited by Harrison and van Grieken).

The extinction efficiency curve in Otto et al., ACP, 7, 4887-4903, 2007 (Fig. 16) is similar with ours, i.e. with a maximum around 600-700nm. For the particle number size distribution we selected, the corrected curves for aerosol scattering, absorption and extinction actually peak at about 300-400nm, as seen in the Figure 1 below (where n=dN/dlogDp). This figure and associated comments do not affect in any way the calculations and the results we present in our manuscript.

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We will modify the text on page 5300 as: "... the largest particle number concentration (dN/dlogDp) is around 100 nm, the largest contribution to scattering (dN/dlogDp * ξ * Dp * dDp) is around 300-400 nm."

The caption of Fig. 2 will be adjusted accordingly:

Figure 2. ... particle number concentration (n=dN/dlogDp) and the contributions to scattering, extinction, absorption and backscattering (n * ξ * Dp * ΔDp) for each diameter (λ=550nm). n was recorded on 10th of February 2008, 05:00 UTC.

Caption of Fig. 1: Efficiency $-\xi$ (for scattering $-\sigma$, extinction $-\kappa$, absorption $-\alpha$ and backscattering $-\beta$), particle number concentration (n=dN/dlogDp) and the contributions to scattering, extinction, absorption and backscattering (n * ξ * Dp * ΔDp) for each diameter (λ=550nm). n was recorded on 10th of February 2008, 05:00 UTC.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 5293, 2012.

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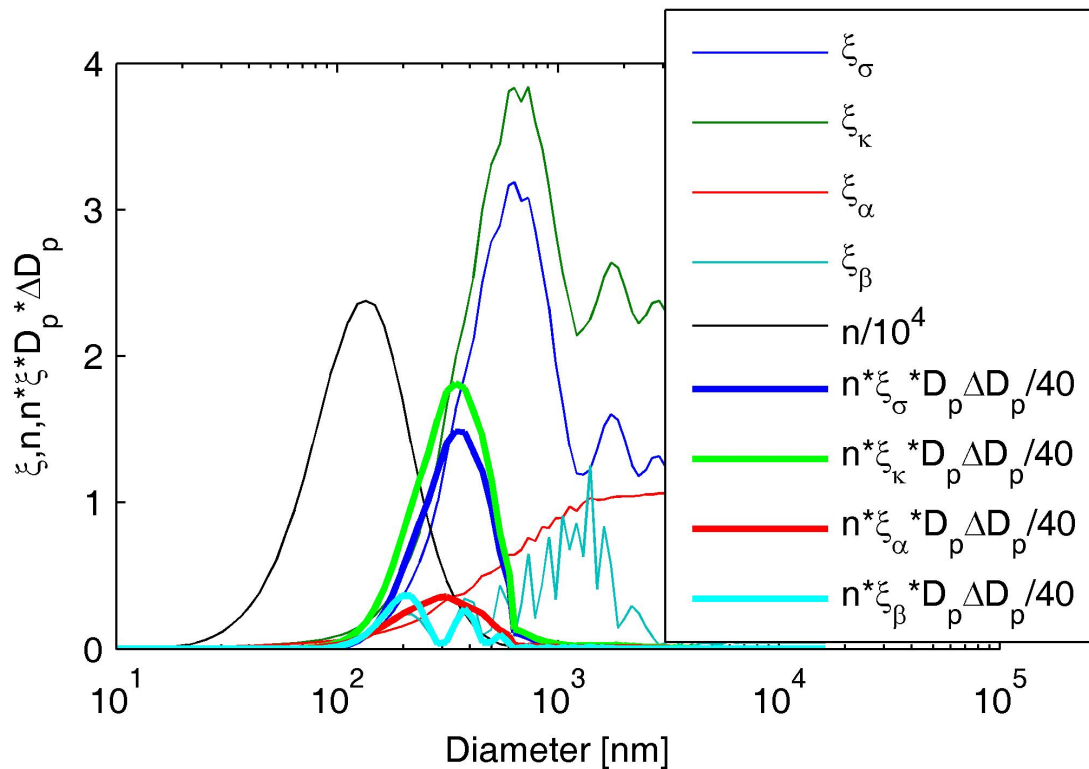Printer-friendly Version

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Fig. 1. See text.