

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

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We agree with the comment posted by S. Otto. Aerosol scattering, absorption, extinction and backscattering are indeed proportional to $dN/d\log D_p \cdot \xi \cdot D_p \cdot dD_p$, with ξ = efficiency. Note that in the manuscript, N actually stands for $dN/d\log D_p$. In order to avoid the confusion we will define $n=dN/d\log D_p$ (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 $n=dN/d\log D_p$). 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 ($dN/d\log D_p$) is around 100 nm, the largest contribution to scattering ($dN/d\log D_p \cdot \xi \cdot D_p \cdot dD_p$) is around 300-400 nm.”

The caption of Fig. 2 will be adjusted accordingly:

Figure 2. . . . particle number concentration ($n=dN/d\log D_p$) and the contributions to scattering, extinction, absorption and backscattering ($n \cdot \xi \cdot D_p \cdot \Delta D_p$) for each diameter ($\lambda=550\text{nm}$). n was recorded on 10th of February 2008, 05:00 UTC.

Caption of Fig. 1: Efficiency – ξ (for scattering – σ , extinction – κ , absorption – α and backscattering – β), particle number concentration ($n=dN/d\log D_p$) and the contributions to scattering, extinction, absorption and backscattering ($n \cdot \xi \cdot D_p \cdot \Delta D_p$) for each diameter ($\lambda=550\text{nm}$). n was recorded on 10th of February 2008, 05:00 UTC.

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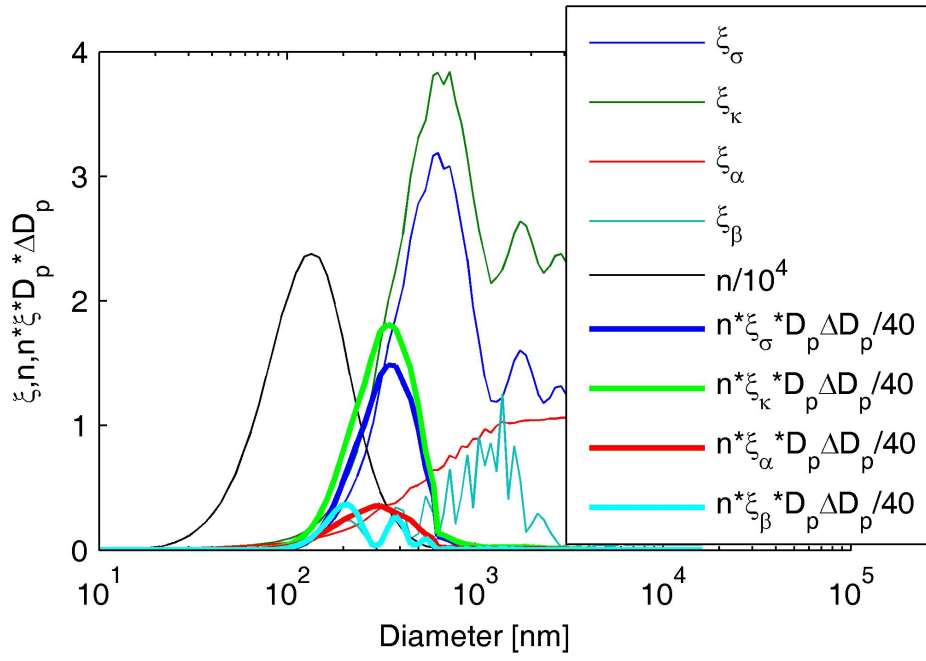


Fig. 1. See text.