

Interactive comment on “Lessons learnt from the first EMEP intensive measurement periods” by W. Aas et al.

Anonymous Referee #2

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This manuscript presents atmospheric measurements of aerosols during the first EMEP intensive measurement periods. The focus of the measurements was to characterise the chemical composition of the aerosols. The experimental data was compared using the EMEP model.

The work presented in this manuscript is very important from the practical point of view. There is a need for more accurate model in order to be able to fully characterise various aspects of the particulate pollution within Europe. In general, the work is carefully done and the manuscript shows results that are novel and should be published in ACP. There are some issues that need attention before potential publication, but these can be considered minor in nature.

Main comment:

C1796

This manuscript presents experimental data and model results that differ significantly in various parts. It would be valuable if the authors focus in discussing the uncertainty estimates of their results. This discussion can be found in parts within the manuscript, but it would deserve a separate section, especially as the difference is sometimes rather large. In general, it would be interesting to see if the observed differences can be explained by known uncertainties either in measurements or in model runs.

Detailed comments:

P 3737, L 20: Please report the temperature within TEOM. This is important piece of knowledge in discussing the role of volatile compounds within the instrument.

P 3742, L 25: Give arguments for splitting the coarse nitrate evenly between PM_{2.5} and PM_{10-2.5}. I have some difficulties understanding the meaning for coarse, if half of it is below 2.5. micrometers.

P 3743, L 1: Explain in more detail how the aerosol water is calculated from ambient RH and T. What does “PM chemical” stand for?

P 3743, L 8-9: Is the gravitational settling the only deposition mechanism? For fine fraction, this is not relevant for deposition.

P 3744, L 29: What does the authors refer to by argumenting that the central European sites are relatively more influenced by anthropogenic sources? More than south European sites or north European sites or east European sites?

P 3774, Fig 3: In the figure legend, what does PM_{2.5}(-PM₁) stand for? Why is it different compared with PM₁₀-PM_{2.5}?

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 3731, 2012.

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