Atmos. Chem. Phys. Discuss., 13, C12137–C12138, 2014
www.atmos-chem-phys-discuss.net/13/C12137/2014/
© Author(s) 2014. This work is distributed under
the Creative Commons Attribute 3.0 License.

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Evaluation of aerosol number concentrations in NorESM with improved nucleation parameterisation" *by* R. Makkonen et al.

R. Makkonen et al.

risto.makkonen@helsinki.fi

Received and published: 12 February 2014

I was wondering what size ranges were used for all particle measurements (lower und and upper cut-off)? How is 'remote' defined in contrast to urban and marine ?

We thank Mr. von Bismarck-Osten for the specific questions. The lower cut-off for the station measurements is indicated in Table 4. The measured total particle concentration is not generally very sensitive to the upper size limit of the measurement, as e.g. DMPS systems usually cover the range until the upper limit of 400-900 nm. The contri-

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

bution of particles with d_p >250 nm to the total particle number concentration is usually neglible (Asmi et al., 2011).

A single station can certainly represent features of several categories e.g. due to different wind patterns. We have used Asmi et al. (2011) and Henne et al. (2010) to guide the selection of categories for each station. Henne et al. (2010) includes 6 categories: (1) rural, (2) mostly remote, (3) agglomeration, (4) weakly influenced, constant deposition, (5) generally remote, (6) weakly influenced, variable deposition. The marine stations in our manuscript are on average not representative of open ocean aerosol, and the high variability at marine stations (see e.g. Spracklen et al., 2010) is partly explained by the coastal location and changes in wind direction and air mass trajectories. Remote stations

Asmi, A. et al.: Number size distributions and seasonality of submicron particles in Europe 2008–2009, Atmos. Chem. Phys., 11, 5505-5538, doi:10.5194/acp-11-5505-2011, 2011.

Henne, S., Brunner, D., Folini, D., Solberg, S., Klausen, J., and Buchmann, B.: Assessment of parameters describing representativeness of air quality in-situ measurement sites, Atmos. Chem. Phys., 10, 3561–3581, doi:10.5194/acp-10-3561-2010, 2010.

Spracklen, D. V., et al.: Explaining global surface aerosol number concentrations in terms of primary emissions and particle formation, Atmos. Chem. Phys., 10, 4775–4793, doi:10.5194/acp-10-4775-2010, 2010.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 26389, 2013.