



Confronting AeroCom models with particle size distribution data from surface in situ stations

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The size distribution is the most important property for describing any interaction of an aerosol particle population with its surroundings. In first order, it determines both, the aerosol optical properties quantifying the direct aerosol climate effect, and the fraction of aerosol particles acting as cloud condensation nuclei quantifying the indirect aerosol climate effect. Aerosol schemes of modern climate models resolve the aerosol particle size distribution (APSD) explicitly. In improving the skill of climate models, it is therefore highly useful to confront these models with precision APSD data observed at surface stations.

Corresponding previous work focussed on comparing size integrated, seasonal particle concentrations at selected sites with ensemble model averages to assess overall model skill. Building on this work, this project intends to refine the approach by comparing median particle size and integral concentration of fitted modal size distributions. It will also look at skill differences between models in order to find reasons for matches and discrepancies. The presentation will outline the project, and will elaborate on input requested from modelling groups to participate in the exercise.