Aerosol concentration and size distribution: Aircraft measurement in North China

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Abstract

In this study, we analyzed the aerosol concentration and size distribution from aircraft measurements during May 2010 in Hebei province, China, where is one of the major populated and polluted regions in China. The measured aerosol concentrations indicated that this region is highly polluted by aerosol particles, with the average number concentration ranging from 10^{2} to 10^{3} cm^{-3}. The measured aerosol particle size generally increases slightly with altitude, and the effective radius is overall less than 0.05 μm and 0.4 μm for nucleation and accumulation mode. Vertical distribution of CCN and CDNC number concentrations are also presented.