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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Properties of aerosols and their wet deposition in the arctic spring during ASTAR2004 at Ny-Alesund, Svalbard" *by* S. Yamagata et al.

Anonymous Referee #1

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General comments:

The manuscript represents the causes of the change in the size distribution of aerosol particles between spring and summer in the Arctic area (at Ny-Alesund, Svalbard). From measurements in former campaigns were concluded that changes in the transport patterns of air masses and the beginning of solar radiation in spring can not explain alone this change in the size distribution. The authors show that the precipitation is one of the main mechanisms for removing aerosol particles. For this purpose components of aerosol particles and precipitation were sampled and characterised to estimate the role of precipitation in aerosol particle removal by deposition, scavenging coefficients

were determined. The meteorological conditions were acquired also. By a considerable measurement programme could be verified that the precipitation type (rain, snow) affects significantly the particle number concentration. The use of a bulk precipitation collector is a deficit in the precipitation characterise. In this work the wet deposition consist of wet and dry deposition. This fact can affect to the estimation of scavenging coefficient. At further experiments wet-only collectors should be used. The submitted manuscript should be published.

Specific comments:

Page 16099, line 10: Leher et al., 1997; Page16104, line 1 and References: Lehrer et al., 1997

Page 16099, line 11: Nishita et al. 2005, 2001 in References.

Page 16101, line 8: How is the size of the sampled aerosol particles? PM10? TSP?

Page 16105, line 2: Delete once ,the,.

Page 16106, line 12 following: Were the amounts of dry deposition at the beginning of the campaign estimated or measured? These data should be inserted in Table 1.

Page 16109, line 7: Okita insert et al.

Page 16110, line 1: Changes in aerosol particle insert ,number, concentration, line 5: of wet deposition on the insert ,number, concentration

Page 16111, line 1-5: From ,Each sign to and P–, respectively,. This passage is not relevant to this work, it can be deleted.

Fig. 5: Insert ,(grey circles: snowfall events),.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 16097, 2008.

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Interactive Comment