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Preferred Mode of Presentation: (Oral)

The Characteristics of Asian Dust and Haze events in Seoul, Korea

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The study on the characteristics of aerosol in Seoul during springtime from 1998 to 2003 is performed by the size-resolved number concentrations of aerosol. Asian dust events occur in spring most frequently, but it has been often observed in wintertime since 1999. Since 2000, the number of Asian Dust days has been increasing, and the intensity has been more severe until 2002. However, there were only 3 dust days in Seoul during the spring of 2003, since the synoptic cyclone was relatively not intense enough to rise and transport dust to Korean peninsula, and the air stream was usually tiled to north of Korean peninsula. In addition, the precipitation was relatively plentiful and the air temperature was cold enough not to keep dry soil condition.

Haze is the suspended particles in the air, reducing visibility by scattering light, and it is often a mixture of aerosols and photochemical smog. Dry particles with diameters of the order of 0.1 ㎛, are small enough to scatter short wavelengths of light. Haze occurs well in winter and spring, and severe haze is observed in the afternoon. The occurrence frequency of haze has been decreasing since 2000 except in May of 2003.

During Asian Dust events from 1998 to 2003, the number concentration of aerosol with diameters from 0.3 ㎛ to 0.5 ㎛ decreases notably, but that larger than 1 ㎛ increases rapidly. On the other hand, for the haze events the number concentration from 0.3 ㎛ to 0.5 ㎛ increases notably, but that larger than 1 ㎛ decreases

Acknowledgements This study was carried out for the project, “Technical Development of Regional Atmospheric Environment Prediction (II)”, one of the Research and Development on Meteorology and Seismology funded by the Korea Meteorological Administration.

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