

Preliminary results of the First Period of Japan-Sino Joint Project on Aeolian Dust (ADEC)

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Recently KOSA events have been observed frequently in Japan and are becoming one of the social concern in Japan. KOSA means a mineral dust emitted from arid region in the Eastern Asia by the strong wind and suspended and/or deposited in the atmosphere over Japan. From the GMS5 satellite image, these Aeolian dust distributions were observed over the wide region in the western part of the Pacific Ocean (Masuda et. al., 2002). Aeolian dust has been recognized as a natural disaster which causes local damage to agriculture, economics and human health at the outbreak region. However, in recent years, it is thought as a important factor of the global climatic system via radiative forcing and influence to the carbon dioxide cycle on the ocean surface as a nutrient salts of the phytoplankton. Among them, radiative forcing direct and/or indirect effects are of important factor of the global warming. Nevertheless, the radiative forcing impact of aeolian dust, a mineral aerosol, is not clear, owing to a lack of information about, for example, its supply to the atmosphere and size range (including sub-micron particle distribution) and a lack of realistic model results (IPCC report, 2001). Taking this into account, Aeolian Dust Experiment on Climate Impact (ADEC) was started on April 2000 as a Japan-Sino Joint Project. This project is financially supported by the ministry of education, sports, science and technology in Japanese side. The aim of this project is the investigation of the supply of dust to the atmosphere and its consequent direct radiative effect on the climate system. For this purpose, we have created three sub-groups: an in situ observation group for dust generation research (G1), a network observation group for dust transport research (G2), and a modeling group for evaluation of dust impact on the global climate (G3). The first period of the project has been done for three years, from April 2000 to March 2003. The first intensive observation period (IOP1) was planned and was carried out from April 12 to April 25 in 2002. Throughout the IOP1, we have succeeded to collect many data and information. In this presentation, a preliminary results of the IOP1 are summarized and

scientific plan to the 2nd stage of ADEC are presented.