Geophysical Research Abstracts, Vol. 7, 08752, 2005
SRef-ID: 1607-7962/gra/EGU05-A-08752

A comparison of the UK Met Office Unified Model modal aerosol scheme with the bin-resolved microphysical scheme in the offline GLOMAP model

G. W. Mann (1), K. S. Carslaw (1), D. V. Spracken (1), K. Pringle (1), A. Jones (2), E. Highwood (3)

(1) Institute for Atmospheric Science, School of Earth & Environment, University of Leeds, Leeds, LS2 9JT, U.K. (gmann@env.leeds.ac.uk / Fax: +44-113-343-6744), (2) Hadley Centre for Climate Research, Met Office, Fitzroy Rd, Exeter, Devon, EX1 3PB. U.K., (3) Dept of Metorology, University of Reading, Reading, RG6 6BB, U.K.

The radiative properties of an aerosol population are critically dependent on its size distribution. Most climate models represent aerosol with several log-normal size modes, often with fixed median radii and standard deviation.

The GLOMAP model (GLObal Model of Aerosol Processes) has a sectional two-moment aerosol scheme capable of capturing complex variations in particle size caused by the wide range of microphysical processes incorporated in the model.

In this presentation the Met Office Unified Model sulfate aerosol scheme is compared with the GLOMAP aerosol scheme within the framework of the offline chemical transport model TOMCAT.

Size and spatial distributions using the two schemes are compared and the differences in radiative properties when a more sophisticated aerosol scheme is employed are explored.