

EXPLICIT CALCULATION OF SEA-SALT AEROSOL CHEMISTRY AS A FUNCTION OF AEROSOL SIZE. EFFECTS ON MODEL RESULTS AND COMPARISON WITH MEASUREMENTS.

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The box model 'MOCCA' (Model Of Chemistry Considering Aerosols, J. Geophys. Res. 101D, 9121-9138, 1996; Nature 382, 327-330, 1996).) has been developed to study the tropospheric chemistry in the marine boundary layer (mbl). The chemical mechanism considers gas-phase reactions as well as aqueous-phase reactions in deliquescent sulphate and sea-salt aerosol particles. Photochemical reaction rates vary as a function of solar declination. Apart from the standard tropospheric HOx, CH₄, and NO_x chemistry, the reaction mechanism includes sulphur, chlorine, bromine, and iodine compounds. Explicit calculation of aerosol chemistry as a function of aerosol size has been included in the model. The effect of particle-size resolved chemistry on release of halogen species from the sea-salt particles has studied. The modelled results are compared with measurements from the campaign at Hawaii in summer 1999.