Session: B6 Oral presentation

Modelling trace species transport and scavenging in deep convective cloud using a general circulation model

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Trace species are useful to analyse large-scale transport, horizontal and vertical transport, as well as chemical interactions between aerosols and gaseous species and exchanges between stratosphere and troposphere. In Tropics, deep convection has a significant impact on the vertical distribution of aerosols. Indeed convective updrafts, downdrafts can quickly move aerosols along the vertical until they are scavenged. Scavenging in convective transport is usually represented by a scavenging coefficient. Here we propose an original scavenging following mass fluxes and microphysics of the convective scheme. Scavenging of inert particles (such as the radionuclides Be-7 and Pb-210) has been implemented into the Emanuel convective parameterization and into the Laboratoire de Météorologie Dynamique climate model (LMDz). The aim of this research is to better understand the influence of convection on the tracer vertical distribution and to diagnose the new scavenging representation with the daily measurements. We first analyse performances of this new scavenging scheme with single column model simulations. In a second part, we present GCM simulations results and compare them to observations.