Geophysical Research Abstracts, Vol. 8, 05671, 2006
SRef-ID: 1607-7962/gra/EGU06-A-05671

Global convection modelling with parameterisations - What is the truth?

H. Tost (1), P. Jöckel (1), M. Lawrence (1), A.Bott (2), J. Lelieveld (1) and the MESSy-Team(1)

(1) Max-Planck-Institut for Chemistry, Mainz, Germany, (2) Meterorologisches Institut of the University Bonn, Germany

Cumulus convection in global atmospheric models is usually described by parameterisations and a variety of these schemes have been developed over the last decades. Usually only one is applied in a global model. This renders sensitivity studies focussing on convection difficult, because models need to be involved which do not solely differ with respect to convection. Consequently, uncertainties between the different convection schemes are hardly traceable.
In our study we have consistently implemented several alternative convection schemes in the global chemistry climate model ECHAM5/MESSy. We are therefore able to systematically analyse the influence of the different convection schemes on the global scale including feedbacks on the dynamics with exactly the same model configuration and with identical boundary conditions. Here, we address the hydrological cycle. Additionally, the implications for convective tracer transport, scavenging and other aspects of atmospheric chemistry are analysed. First results of this study are presented.