Geophysical Research Abstracts, Vol. 9, 07310, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-07310

Evaluation of the dynamical structure of deep convection in the tropics using a mesoscale model and high resolution back trajectories: a Hector event during SCOUT-O3 campaign

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To improve our understanding of the interaction between convection and the tropical tropopause layer, trace gas measurements have been successfully used. For those studies to be effective it is crucial to distinguish between anthropogenic contamination and in-cloud generation of tracer gases. We have developed a high resolution back trajectory tool to be used in the Hector region. This can be subdivided in two main parts. The first aims to reproduce the convective event through high resolution numerical simulations using a non-hydrostatic model. The second part used the outputs of the simulations to initialize a three-dimensional back trajectory module. A technical description of the two modules, their implementation and some preliminary results will be presented.