Geophysical Research Abstracts, Vol. 9, 08307, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-08307

Comparison of SCOUT-O3 Darwin campaign measurements with results from a global chemistry-climate model along flight tracks

M. Kunze (1) and the E5M-Darwin-eval TEAM

(1) Freie Universität Berlin, Germany (Markus.Kunze@met.fu-berlin.de/ Phone: +49 30 838 71170)

We use measurements taken on-board the Geophysica aircraft during the SCOUT-O3 Darwin campaign in November/ December 2005 for further evaluation of the new Chemistry Climate model (CCM) ECHAM5/MESSy. The CCM was run with a horizontal resolution of T42 and 90 layers from the surface to the mesopause with vorticity, divergence, temperature and surface pressure nudged to ECMWF analysis data in the troposphere (700 - 200 hPa) for the period 1996 to 2005. We focus on the tropical tropopause layer where the vertical resolution of the model is about 600m.

To compare the results of this CCM run with the measurements taken during the Darwin campaign, the CCM results were interpolated to the tracks of the Geophysica flights.

Emphasis of the analysis is on water vapour (measured with the instruments FISH and FLASH), ozone (FOZAN), methane (ALTO), carbon monoxide (CO_TDL), CFC-12, CFC-11, Halon 1211 (HAGAR), nitric oxide and total reactive nitrogen (SIOUX). Despite the large differences in temporal and spacial resolution between the campaign measurements and the model data, the overall agreement is quite good.