Geophysical Research Abstracts, Vol. 9, 10364, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-10364

A high resolution mesoscale model of North Australia: tropical convection and its role on transport through the tropical tropopause layer.

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The focus of this work is on using a high resolution limited area model of North Australia and the West Pacific at ∼12km horizontal resolution to study tropical deep convection and the mechanisms by which chemical species (in particular short-lived species) can enter the tropical tropopause layer and the lower stratosphere.

This work is part of the ACTIVE measurement campaigns which took place in Darwin over the period November 2005 to February 2006. Using the UK Met Office Unified Model (UM) vn6.1, we aim to identify the mechanisms responsible for troposphere-stratosphere coupling. In particular, we try to separate the relative contribution of slow, large scale transport, and fast, localized transport arising from deep convection.