



A comparison of stratospheric chemistry measurements from EOSMLS on the Aura satellite with a long run of the SLIMCAT model

R. Harwood (1), I. MacKenzie (1), M. Chipperfield (2), N. Livesey (3)

(1) University of Edinburgh, UK, (2) University of Leeds, UK, (3) Jet Propulsion Laboratory, Ca, USA. (r.harwood@ed.ac.uk / Phone: +44-131-650 5095)

The Aura satellite, launched in July 2004, carries the Earth Observing System Microwave Limb Sounder (EOSMLS), which measures three-dimensional distributions of ozone and some key species in its catalytic destruction cycles, together with greenhouse and tracer species from the upper troposphere to the the stratopause (13 principal species in all).

Concurrently with the observations a continuous run of the SLIMCAT stratospheric chemical transport model (in its UNICAT-SLIMCAT configuration which extends from the surface to the mid-mesosphere) has been in progress at T42 resolution in the horizontal and approximately 1km in the vertical. This is driven with ECMWF winds and temperatures and is sampled at the MLS measurement positions and times, so that detailed comparison, free from sampling bias, can be made between the theoretical predictions and the actual measurement.

This paper will present the main results of the comparison, using the version 2.02 data from EOSMLS, which are just becoming available. Where there is a significant divergence between the theoretical expectations and the measurements, the emphasis will be on establishing whether the discrepancy results from the transport characteristics, chemical formulation or measurement capability.