Geophysical Research Abstracts, Vol. 7, 07136, 2005
SRef-ID: 1607-7962/gra/EGU05-A-07136

Tropical UTLS water vapour and ozone as observed by the MIPAS instrument.

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Observing trace gases in the tropical Upper Troposphere and Lower Stratosphere (UTLS) is typically carried out using instruments onboard ground and airborne platforms. Despite their high vertical precision, these modes of measurements can be temporally and spatially constrained. Satellites are a potentially powerful means of obtaining high frequency, continuous global atmospheric information enabling investigation of large-scale transport in addition to UTLS processes such deep convection, stratospheric dehydration and tropospheric ozone production.

The Michelson Interferometer for Passive Atmospheric Sounding (MIPAS) onboard the ENVISAT provides an opportunity to study infrared emission spectra of the Earth's limb using Fourier Transform spectroscopy. The MIPAS allows consistent retrievals of atmospheric constituents at a high resolution currently down to 6 km. Reprocessed ESA Operational MIPAS data shows significant cloud contamination particularly at the tropical latitudes. A cloud detection scheme, developed at the University of Leicester is used to 'clean' data for use in analysis. Calculations of cloud occurrence frequencies provide an effective measure of identifying cloud positions hence allowing recognition of 'cloud-free' data.

Seasonal cloud cleared MIPAS ozone and water vapour averages will be presented with focus on convectively active regions and biomass burning hotspots, specifically Brazil, Equatorial Africa and Indonesia/Australia as these countries will have hosted the TROCCINOX-2 and will host the AMMA and SCOUT field campaigns. In its new reduced resolution mode, MIPAS can provide support to these campaigns, act as a valuable comparative source and allow an opportunity to explore the dynamics and composition of the tropical UTLS.