

ATS/CIRA Colloquium

Atmospheric Science 50th Anniversary Speaker

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CSU ATS Masters 1984

Visiting CSU ATS from NOAA Earth Systems Research Laboratory, Chemical Sciences Division, Chemistry and Climate Processes Group

The stratospheric mean meridional circulation and its relation to water, ozone and climate

Hosted by Thomas Birner

Thursday, April 19, 2012

**ATS room 101; Discussion will begin at 3:30pm
Refreshments will be served at 3:00pm in the coffee lounge**

On the global scale, the dominant dynamical feature that influences the zonally averaged distribution of temperature and species in the stratosphere is the Brewer-Dobson circulation (BDC), a wave-driven, Lagrangian mean, meridional mass circulation linking the tropics to the higher latitudes. The circulation can be broken down into three main parts; ascent in the tropics bringing tropospheric air into the stratosphere, poleward transport in the stratosphere and descent at middle and polar latitudes, ultimately bringing stratospheric air back into the troposphere. Understanding the observed variability of the BDC throughout the depth of the stratosphere is of interest for a range of climatic processes. Changes in the BDC will alter transport of anthropogenic species through the tropopause that can subsequently alter the radiative and chemical balance of the stratosphere. Similarly, changes in the radiative balance in the stratosphere will alter the strength of the BDC. In this seminar I will discuss what observations can be used to infer variations in the strength of the BDC, and its subsequent impact on stratospheric ozone and water vapor distributions.

Link to colloquium videos and announcement page: <http://www.atmos.colostate.edu/dept/colloquia.php>