



Transport of ozone and CO near the tropical tropopause using WACCM

Marta Abalos (1), William J. Randel (2), Douglas E. Kinnison (2), and Encarna Serrano (1)

(1) Universidad Complutense de Madrid, Spain (mabalosa@fis.ucm.es), (2) National Center for Atmospheric Research, Boulder, USA

The transport of ozone and carbon monoxide (CO) near the tropical tropopause and in the tropical lower stratosphere is investigated using output from the Whole Atmosphere Community Climate Model (WACCM). We study temporal variability of the different zonal mean tracer transport terms on seasonal and sub-seasonal timescales. The results identify vertical advection by tropical upwelling as the main transport term in this region, which also plays a key role in driving the variability in the ozone and CO concentrations. In addition, eddy transport (mainly quasi-isentropic) makes an important contribution to the temporal variability of both tracers. The spatial structure of both transport terms is analyzed as well, in particular we find a detailed vertical structure of the eddy transport near the tropical tropopause.