Geophysical Research Abstracts
Vol. 12, EGU2010-10158, 2010
EGU General Assembly 2010

Ozone variability over Antarctic continent

Mª Concepcion Parrondo (1), Margarita Yela (1), Manuel Gil (1), and Hector Ochoa (2)

(1) INTA, Observacion de la Tierra, Teledeteccion y Atmosfera, Ajalvir, Spain (parrondosc@inta.es), (2) Dirección Nacional del Antártico, Buenos Aires, Argentina

Ozonesoundings data from Antarctic Belgrano Station (78ºS, 34ºW) carried out since 1999 are used to analyze the inter-annual variability of ozone in the troposphere and lower stratosphere. Tropospheric ozone has been calculated integrating the ozone content from the ground up to the ozone tropopause for each ozonesounding using Betan et al. [1996], definition. The annual cycle of the tropospheric ozone values shows an increase from summer to winter months. In August, tropospheric ozone almost doubles the values in February. Dynamical and chemical factors responsible of this behaviour are presented. Ozone loss rate during September in the lower stratosphere for the eleven year record is presented.

The highest inter-annual ozone variability in observed during November and December in the lower stratosphere (12-27 km). Minimum ozone values concentration in the 20-27 km layer are found in November 2008. Mean 2008 December 12-20 km partial column remained below 40 DU, lower by 35% than the 2000-2005 mean. We present the relationship between the potential vorticity, timing of the vortex breakup date, the strength of the vortex and ozone concentration at different levels in an attempt to find dynamical features responsible for the observed behavior.