Geophysical Research Abstracts, Vol. 7, 03376, 2005
SRef-ID: 1607-7962/gra/EGU05-A-03376


# Cooling of the LS and ozone changes in long term radiosounding measurements from Poland

**B. Kois**, Z. Litynska and A. Jaczewski

Centre of Aerology of IMWM

Zegrzynska 38, 05-119 Legionowo, Poland

e-mail: Bogdan.Kois@imgw.pl

Long-term radiosounding measurements in Poland, at Legionowo and Leba, have been analysed to detect significant changes of temperature and ozone in the LS. At both sites, a significant cooling in the LS has occurred during the years 1979-2004. The cooling of the LS at Leba has been much stronger than at Legionowo, comparable to that observed in northern high latitudes. An accelerated cooling has been stated for Legionowo in recent years when analysing the longest available series 1966-2004. The cooling in the LS over Poland correlate well with the ozone changes observed on ozonesounding data. Ozone showed large negative trends in the LS above Legionowo during winter and spring in the series 1979-1993, and no significant trend in the following years, due to large ozone variability. Significant ozone decreases in the stratosphere above 100hPa indicate however, that increasing polar ozone losses in the last decade might have cooled the stratosphere over Central Europe. The ozone deficiencies and cooling in the LS have been the largest at the beginning of winter, in connection with the enhancement of subtropical advection and the appearance of ozone mini-hole events since 1990. Formation of PSC at the vortex edge, induced by sub-tropical advection, proceeded the record low total ozone over Poland on January the $1^{st}$ 1998.