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## Twenty-five years of ozonesonde measurements at South Pole: An assessment of changing loss rates

Birgit Hassler[†]; Susan Solomon; John Daniel; Samuel Oltmans; Bryan Johnson
[†] CIRES/NOAA, USA
Leading author: birgit.hassler@noaa.gov

In 2010, 25 years of continuous, year-round ozone soundings at South Pole station, Antarctica, were completed. These measurements provide unique documentation about the seasonality, trends, and variability of ozone depletion in the polar stratosphere at high vertical resolution. We have analyzed the ozone mixing ratios on pressure levels, obtained by the soundings, from about 200 to 15 hPa to learn more about the temporal development of ozone loss, onset and loss rates. During the last 25 years the onset of ozone loss at South Pole has moved forward significantly. In order to determine ozone loss rates, we have applied a linear fit to ozone from the end of August (day 235) to the end of September (day 270) over several five-year periods for each pressure level separately. The highest loss rates occur at around 50 hPa to 30 hPa. They grew from the late 1980s to the late 1990s and have remained roughly stable since then. To estimate a time frame for when a reduction in ozone loss will be observable we have normalized the estimated loss rates to the concentrations of equivalent effective stratospheric chlorine (EESC) present at the same time. These values are then used to estimate future loss rates as EESC declines. We have found that at pressure levels around 70 hPa loss rates will be significantly reduced late in this decade.