## Analysis of Antarctic long term ozone sounding time-series

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Severe ozone loss has been observed in the Southern Hemisphere polar vortex since the mid 1980s. Ozone soundings have been made in Marambio, which is situated on the Antarctic Peninsula, since 1988, i.e. soon after the discovery of the Antarctic 'ozone hole'. The soundings are carried out as a cooperation between the national weather services in Finland and Argentina. The ozone sounding record at Marambio (64S, 57W) now covers more than two decades of nearly continuous ozone profile data. Only a few other Antarctic stations have gathered comparable data sets. The decrease in emissions of ozone depleting substances has led to expect that the stratospheric ozone would slowly recover over the next decades. Therefore several studies have been conducted with the aim of analyzing ozone trends and possibly detecting a signal of ozone recovery. In addition to purely observational data there are long-term meteorological re-analysis data sets that include ozone fields. The European Centre for Medium-Range Weather Forecasts (ECMWF) ERA-Interim reanalysis data set covers the time period from 1989 to 2011. The ozone profile timeseries at Marambio will be analyzed together with data from other sounding stations and Earth observation data. An additional challenge for the trend analysis is due to the location of Marambio close to the vortex edge. The classification/filtering of the data will be based on meteorological reanalysis data. The trend analysis will be supported by data form the FinROSE chemistry-transport model. The FinROSE-ctm will be driven by the ERA-Interim winds and temperatures.