

QOS2016-112, 2016

Quadrennial Ozone Symposium of the International Ozone Commission

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## **Thirty Five Years of Influence of the Antarctic Ozone Hole over South of Brazil (1979 – 2013)**

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In this work, the Influence of the Antarctic ozone hole over the South of Brazil which occurred in the period of 35 years, from 1979 to 2013, were identified. For this, we analyzed the ozone total column obtained through Brewer Spectrophotometers MKIV #081 model used during the period from 1992 to 2000, MKII model #056 from 2000 to 2002 and MKIII #167 model from 2002 to the present day, installed in the Southern Space Observatory—SSO/CRS/INPE – MCTI (29.4 °S; 53.8°W; 488.7m) and by satellite instruments Total Ozone Mapping Spectrometer – TOMS (Nimbus-7 from 1979 to 1993, Meteor-3 from 1991 to 1994 and Earth Probe from 1996 to 2005) and Ozone Monitoring Instrument – OMI (since 2004) to the same latitude of the Southern Space Observatory. The satellite data were used only in the absence of surface equipment data. In the days of low ozone content, isentropic analyses of potential vorticity were conducted using Reanalysis data provided by the National Centers for Environmental Prediction Atmospheric Research (NCEP/NCAR), in order to verify the origin of ozone-poor air mass. Analysis of the polar air masses origin took place with backward trajectories made through the HYSPLIT model of NOAA. With the methodology applied it was possible to identify 72 events of influence of the Antarctic Ozone Hole over south of Brazil, which showed an average decrease in ozone total column of  $9.35 \pm 2.93$  %. The majority of the events occurs on October (thirty-three), followed by September (twenty-two), August (nine) and November (eight events).