

' **Abstract No.5909** Submitted to/ Soumis à: Polar ozone: troposphere and stratosphere

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02/03/2012

ATMOSPHERIC PATTERNS DURING INFLUENCE OF THE ANTARCTIC OZONE HOLE EPISODE OVER SOUTHERN OF BRAZIL, IN SEPTEMBER, 3th, 2009

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During the austral spring, masses of ozone-poor air can come off the Antarctic ozone hole in mid-latitudes and attain a phenomenon known as "secondary effects of the Antarctic Ozone Hole." To prove the occurrence of the phenomenon, we analyzed measurements of the ozone total column obtained with a Brewer Spectrophotometer installed at the INPE's Southern Space Observatory (29.42 ° S, 53.87 ° W) in São Martinho da Serra, RS, Brazil, with observational data from the total ozone column and OMI satellite images collected by NASA and we analyzed maps of potential vorticity on isentropic surfaces and retroactive trajectories of air masses using the NOAA HYSPLIT model. For the day, 3 September 2009, the occurrence of the phenomenon was confirmed with help of an extensive analysis of weather patterns across the fields: daily mean wind at 250 hPa and 500 hPa Omega, cut vertical potential temperature and wind for the length of 54 ° west, the sea level pressure and thickness between 1000 and 500 hPa and GOES 10 satellite image of water vapor. It was observed that the fall in total ozone column event occurred with the presence of the entrance of an equatorial jet polar frontal ramp and of a region of low pressure that supported the formation of intense cloud that crossed over the South of Brazil, which favored the intrusion of a stratospheric air into the troposphere, transporting ozone-poor air from the Antarctic region to the South of Brazil.

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