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Encontro dos alunos de pós-graduação em meteorologia do CPTEC/INPE



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## ANALYSIS OF STRATOSPHERIC OZONE DEPLETION AND THE INFLUENCE OF THE ANTARCTIC OZONE HOLE WITH THE MIMOSA-CHIM MODEL

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### RESUMO

The decrease in the amount of stratospheric ozone in the Antarctic region during winter/spring, among other factors, is due to the Brewer-Dobson circulation occurring in the stratosphere. Simulations with a 3-D chemical transport model, high resolution horizontal, Modéle Isentropique de transport Mésoéchelle de l'Ozone Stratosphérique par Advection avec CHIMie (MIMOSA-CHIM), were carried out in the Southern Hemisphere in order to observe the vertical profile of the ozone in cases of significant reduction of stratospheric ozone contents. The analysis of the behavior of the isentropic potential vorticity obtained through the MIMOSA-CHIM model between 400-675K of potential temperature, indicates a considerable increase of the potential vorticity, besides a considerable decrease of the height of the tropopause in the region of the decay of the ozone column. The analysis of the vertical profile of ozone shows about the region of the Antarctic ozone hole, there is a decrease in the temperature of the stratosphere and a slight increase in the content of Chlorine Monoxide (ClO) is observed, which favors the destruction of the ozone contents. For further studies, the objective is to analyze the behavior of the exchanges between stratosphere and troposphere and the possible influence on systems at high levels.