



Tropospheric ozone variations at Terra Nova Bay coastal station and Dome Concordia high altitude station (Antarctica)

P. Cristofanelli (1), P. Bonasoni (1), F. Calzolari (1), C. Lanconelli (1), A. Lupi (1), V. Vitale (1) and L. Agnoletto (2)

(1) CNR, Institute of Atmospheric Sciences and Climate, Via Gobetti 101, 40129 Bologna, Italy, (2) PNRA S.C.r.l., Casaccia Research Centre, Rome, Italy (P.Bonasoni@isac.cnr.it)

In troposphere, ozone represents one of the most active gases involved in photochemical reactions. Moreover, ozone plays an important role in the radiative budget of atmosphere and, by influencing the lifetime of others greenhouse gases in troposphere, it provides also an indirect impact on climate. For these reasons, measurement activities carried out in unperturbed areas like Antarctica represent a significant contribution to better understand the role played by ozone in these important issues. Within the framework of the Italian National Programme of Antarctic Researches (PNRA), since 2001 summer experimental campaigns performed at Terra Nova Bay (74.7 S, 164.1 E, 42 m asl) permitted to obtain information about background ozone variations on the coastal region of the Ross Sea. Moreover, since December 2005, continuous ozone measurements started at the permanent station of Dome Concordia (75.1 S, 123.3 E; 3233 m asl) on the Antarctic plateau.

With the purpose to evaluate how different transport processes can influence the tropospheric ozone behaviour, ozone concentrations and meteorological data recorded at Terra Nova Bay as well as three-dimensional air mass back-trajectories have been carefully analysed in this work. Finally, preliminary consideration on the first tropospheric ozone data recorded at Dome Concordia station will be also provided.