



A 150 year record of water stable isotopes from GV7, a near coastal site between Oates Coast and Talos Dome (East Antarctica)

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During the 2001/02 Italian Antarctic Expedition, a 55 m deep firn core (GV7; 70°41' S, 158°52' E; 1947 m; -31.8°C) has been drilled on the ice divide extending from the Oates Coast to Talos Dome in the framework of the ITASE program. Ice core records are one of the most valuable tools for paleoclimate reconstructions due to the scarcity of climatological data available from the Antarctic continent and from the Southern Ocean in general. Here we present the results obtained from the analysis of the oxygen isotope composition ($\delta^{18}\text{O}$) of the GV7 firn core. At the moment of the writing δD measurements are in progress and will allow us the calculation of the deuterium excess ($d = \delta\text{D} - 8*\delta^{18}\text{O}$) values. The dating of the core was carried out by using the seasonal variations recognized in the nssSO_4^{2-} record coupled with the observation of dated reference horizons. These data allow us to suggest that the bottom of the core date to $\text{AD}1854 \pm 3$ with an average accumulation during the past 150 yr of $237 \text{ kg m}^{-2} \text{ yr}^{-1}$. The $\delta^{18}\text{O}$ values range from -38 to -24 per mil, with a mean value of about -29.9 per mil (V-SMOW). The dating of the GV7 core allowed us to define mean annual $\delta^{18}\text{O}$ values. Decadal oscillations of about 3 per mil of amplitude characterize the isotopic profile with a decreasing trend in the upper 10 m of the core, corresponding to the 1982-2001 period. A first comparison of our data with the Antarctic Oscillation Index (AAO) over the 1979-2001 period highlights an antiphase behaviour between the two records in agreement with previous studies showing lower temperatures and depleted isotopic values associated to positive AAO index over East Antarctica.