



Dust flux in peripheral East Antarctica: preliminary results from GV7 ice core and extension of the TALDICE dust record to the sub-micron range

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Improved understanding of climate variability over the last two millennia - that is a critical time period for investigating natural and anthropogenic climate change - is one of the key priorities of the International Partnership in Ice Core Sciences (IPICS). The Italian contribution to this concerted international effort is represented by the project IPICS-2kyr-Italy supported by PNRA.

In this context, a novel intermediate core (about 250 m deep) was drilled during the 2013/14 field season at the peripheral site of GV7 in East Antarctica (70°41'S, 158°52'E; elevation 1950 m), where snow accumulation is very high (about 3 times Talos Dome, 10 times EPICA Dome C).

After the ice core processing campaign at EuroCold (UNIMIB) carried out in synergy between Italy and Korea teams, measurements of dust concentration and size distribution are now in progress.

A novel Coulter Counter apparatus has been set up in order to extend dust size spectra down to 600 nm. Samples are analyzed immediately after melting and also 24h later under identical conditions, for a quantitative assessment of the contribution of water-soluble microparticles (salts).

Seasonal variability and trends of insoluble dust, metastable salts and size distribution of these compounds is under study.

The possibility to extend the size range of dust measurements has allowed refining estimates of dust flux at Talos Dome and an adjustment of published data.