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First Results of CFA - Measurements on the Gas-Phase of the Talos Dome Ice Core

S. Schüpbach (1), U. Federer (1), P. Kaufmann (1), M. Hutterli (2), T.Stocker (1)

(1) Climate and Environmental Physics and Oeschger Centre for Climate Change Research, University of Bern, Switzerland, (2) British Antarctic Survey, Cambridge, UK (schüpbach@climate.unibe.ch / Fax: +41 (0)31 6314465)

The analysis of ice cores with Continuous Flow Analysis (CFA) offers the possibility of high resolution profiling of chemical tracers as well as the reconstruction of gas concentrations (e.g. CH_4) and physical properties of the ice (e.g. Total Air Content).

Here we present latest results and data of CH_4- and TAC-measurements from the recent CFA campaign of the Talos Dome ice core in fall 2007, covering the depth interval of 479 - 666m and 1002 - 1278m.

Because TAC- as well as CH_4-analysis are very sensitive to different conditions at the water-air interface, the temperature inside the Gas Decoupling Unit is stabilized to control solubility effects as well as temperature drifts and the pressure of the melt flow is measured.

CFA gas measurements allow high resolution methane records. We present measurements with a spatial resolution of 20 cm. Such high resolution methane measurements can improve the dating of ice cores significantly.