



Development of a setup for the analysis of $\delta^{13}\text{C}$ in CO_2 at the Centre for Ice and Climate

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So far, CO_2 records from ice cores are available from Antarctica (i.e. the Southern Hemisphere) only. The examination of Greenland ice cores has not been fully exploited yet. This is due to the occurrence of in-situ formation of CO_2 in Greenland ice caused by its relatively high impurity content, especially in ice from the last glacial period. A record from Greenland ice would not only allow for the reconstruction of Northern Hemisphere CO_2 but would also provide a higher resolution than present Antarctic records. To obtain a clean Greenland record we need measurements in high resolution to exclude CO_2 contributions from in-situ production. For this purpose, we started establishing a state-of-the-art facility for gas extraction and high precision trace gas measurements on small, discrete ice core samples. In a first step, for the analysis of the isotopic CO_2 signature (i.e. $\delta^{13}\text{C}$) a dry extraction system (ice cracker) has been designed and built. We will present technical details of the ice cracker as well as details on the coupling between the extraction unit and the analytical unit including gas-chromatography and isotope ratio mass spectrometry.