



CO₂ and CH₄ measurements on the Berkner ice core: a constrain for evaluating the continuity and the chronology of the record

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The Antarctic coastal drilling site is located in the middle of Berkner Island at an altitude of 900 m. It is influenced by the presence of the Ronne and the Filchner Shelves, the Weddell Sea and the South Atlantic Ocean. This site is characterized by a mean temperature of -26°C and an accumulation rate of $13\text{ g/cm}^2/\text{yr}$. These characteristics allow us to focus, in particular, on climatic evolution during approximately the last 100-125 kyr before present. But first, the integrity of the record and its chronology should be investigated.

Measurements of CO₂ and CH₄ in ice cores are widely used for describing the greenhouse gas evolution during the past in relation with climate. CH₄ has also been shown to be a precious marker for synchronizing paleorecords obtained from different ice cores. However, our CH₄ results obtained at Berkner don't enable us currently to provide a one to one synchronization with the deep ice core record (Vostok, EPICA). Also, we combine here new low resolution CO₂, CH₄ and $\delta^{18}\text{O}$ records at Berkner and compare them with other antarctic records to identify periods on the past such as the last interglacial period.