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Preliminary carbon isotope results from the ANDRILL MIS core – the top 100 m of AND-001-B.

Stefan W. Vogel

Analytical Center for Climate and Environmental Change, Dept of Geology and
Environmental Geosciences, Northern Illinois University, DeKalb IL, 60115, USA

svogel@geol.niu.edu

Carbonates are well known to contain paleo-climatic information. Carbonate cementation was found throughout the ANDRILL MIS core AND-001-B. Initial carbon isotope results measured on a few bulk sediment samples showed large variations in $\delta^{18}\text{O}$ as well as $\delta^{13}\text{C}$. $\delta^{18}\text{O}$ values range between -3 to -14 per mil with $\delta^{13}\text{C}$ values between -1 and -8 per mil (Pompilio et al., 2007). The large fluctuations in $\delta^{18}\text{O}$ are likely due to the presence of carbonates formed in the subglacial environment. Subglacial carbonates with $\delta^{18}\text{O}$ values of -36 per mil had been found beneath West Antarctic ice streams. Mixing of subglacial sediment containing glacially derived carbonates with marine sediment deposits could explain the observed variations.

More detailed analyses, including a bulk carbonate component analysis should provide valuable insight into the source for the negative carbonate excursions and in this way into glacial interglacial cyclicity and the advance and retreat of grounded ice across the McMurdo sound. A specific focus of the current detailed investigation is the Marine Stable Isotope 31 (MIS-31) 1.07 Ma ago. Initial results of this detailed investigation, focusing on the top 100 m of the AND -001 B core, are presented here.