Geophysical Research Abstracts,
Vol. 11, EGU2009-11763-1, 2009
EGU General Assembly 2009

Pliocene-Pleistocene record of glacial Interglacial Cyclicity in the McMurdo Sound from the ANDRILL-MIS carbonate record

S.W. Vogel (1,3), D. Helling (2), R.E. Brown (3), G. Kuhn (2), and D. Tollstrup (3)

(1) Northern Illinous University, Analytical Center for Climate and Environmental Change, DeKalb IL, United States (svogel@geol.niu.edu), (3) Dept of Earth and Planetary Sciences – University of California - Santa Cruz, USA, (2) Alfred-Wegener-Institut for Polar- and Marine Research, Bremerhaven, Germany

Carbonates are long known to contain paleo-climatic and paleo-environmental records. We have examined the carbonate record of the upper 200 m of the ANDRILL-MIS core and found distinct signals of glacial/interglacial cyclicity. Indicators for glacial-interglacial cyclicity are the isotopic composition of carbonates as well as carbonate mineral composition. d18O isotope excursions usually correspond with an opposite shift in d13C. This shift is likely caused by a shift in carbon source and/or porewater chemistry leading to the carbonate precipitation, indicating a climatic or environmental change. Several positive isotope excursions, indicator for interglacial conditions, were found in the Pleistocene record. one of them at 25 mbsf possibly indicating a collapse of the West Antarctic Ice Sheet during Marine Isotope Stage 11 or 5e (e.g. Scherer et al. 1998). Further detailed work is currently under way to further define individual Pliocene and Pleistocene interglacial periods and number of interglacials recorded in the carbonate record.