



Atmospheric CO₂ variations on millennial-scale during MIS 6

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Understanding natural carbon cycle / climate feedbacks on various time scales is highly important for predicting future climate changes. Paleoclimate records of Antarctic temperatures, relative sea level and foraminiferal isotope and pollen records in sediment cores from the Portuguese margin have shown climate variations on millennial time scale over the Marine Isotope Stage 6 (MIS 6; from approximately 135 to 190 kyr BP). These proxy data suggested iceberg calving in the North Atlantic result in cooling in the Northern hemisphere and warming in Antarctica by changes in the Atlantic Meridional Overturning Circulation, which is explained by a bipolar see-saw trend in the ocean (Margari et al., 2010). Atmospheric CO₂ reconstruction from Antarctic ice cores can provide key information on how atmospheric CO₂ concentrations are linked to millennial-scale climate changes. However, existing CO₂ records cannot be used to address this relationship because of the lack of suitable temporal resolution. In this work, we will present a new CO₂ record with an improved time resolution, obtained from the Dome C ice core (75°06'S, 123°24'E) spanning the MIS 6 period, using dry extraction methods. We will examine millennial-scale features in atmospheric CO₂, and their possible links with other proxies covering MIS 6.

Margari, V., Skinner, L. C., Tzedakis, P. C., Ganopolski, A., Vautravers, M., and Shackleton, N. J.: The nature of millennial scale climate variability during the past two glacial periods, *Nat.Geosci.*, 3, 127–131, 2010.