

# Melting history of the West Antarctic Ice Sheet since the Last Glacial Maximum

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We have investigated 3 marine sediment cores to reconstruct the transport paths of Ice Rafted Debris (IRD) and terrigenous sediment from the Antarctic continent into the Southern Ocean during the past 24,000 years. Precise age determination is one of the key problem to overcome to study palaeoclimatology using the samples obtained from the Antarctic Ocean. We measured 30 radiocarbon measurements on organic carbon of the cores and conducted radiolarian analysis in particular looking at the abundance of the *Cycladophora davisiana* to construct reliable chronology for the cores. The age uncertainties for the age model that we employed are up to 3000 years for the last 24,000 years.

We employed the proxy to understand the origin of the sediments using the relative abundances of  $K_2O$  and  $Na_2O$ . Core top investigations showed the variation of the ratio reflecting the degree of the influence from 3 surface currents in the region (i.e. the ratio can constrain the source area of the sediments).

Analyzing IRD,  $K_2O/Na_2O$ ,  $^{14}C$  and Radiolaria in the cores showed temporal variations of IRD flux as well as the regions of the sediment supply during the Last Glacial Maximum (LGM) to the present. We found 2 distinct IRD peaks at around 30-17 cal ka and 15-12 cal ka in the cores and we discuss their glaciological and palaeoclimatological implications in the presentation.