



Environmental magnetic records of Mid-Late Pleistocene drift sedimentary sequences from the Antarctic Peninsula, Pacific Margin

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The Pacific Continental Margin of the Antarctic Peninsula was the area of interest of the Sediment Drift of The Antarctic Offshore Project (SEDANO Project). A paleomagnetic and environmental study was carried out on four sequences from Drift 7. The coring was yielded mainly on the gentle side of the drift 7 at c. 3500 m water depth, within the upper seismic unit, the Drift Maintenance Stage, that represents the Pleistocene time. The sequences show alternations of grey laminated terrigenous and brown hemipelagic intervals, which reflect glacial-interglacial cycles. The interaction of along-slope bottom water flow with down-slope turbidity currents controls the formation and the shape of the drifts on the rise (Rebesco et al., 1997, 2002). Sedimentological and compositional investigations on the sequences from Drifts 7 and 4 allowed the identification of a succession of four climatic stages: glaciation, glacial, deglaciation and interglacial (Lucchi et al., 2002). High resolution measurements were performed on u-channels and about forty-three discrete samples. This work focus on the definition of the mineralogy of the main magnetic carriers which is still matter of debate and on the study of the short time variability of magnetite grain-size which results particularly evident during the last glaciation. ARM/mag_susceptibility magnetic parameter resulted to be a good record of such variability and reflects changes in the sedimentation on the rise when the ice sheet was probably closer to the continental shelf edge. An integrated age model has been provided for cores SED-12 and -13, which have the higher sedimentation rates. It is noteworthy the millennial scale vari-

ability that we found to persist during the last glacial. The advances of the grounding of ice shelf may be a reliable reason as suggested by Evans et al. (2006) in Pine Island Bay. The periodicity of 6000 yr results similar to that of the D-O warm events in Greenland (Dansgaard et al., 1993; North Greenland Ice-core project members, 2004). Moreover the high resolution of the SED-12 records allow the comparison to recent ice core records part of the EPICA project (Jouzel et al., 2007).