



Marine productivity changes around the Crozet Plateau, Indian sector of the Southern Ocean.

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The Crozet Plateau, located in the Indian sector of the Southern Ocean (44-47S, 47-55E) is one of the few areas in the Southern Ocean characterised by relatively high productivity. Thus, this region provides an opportunity to compare carbon export to the surrounding HNLC regions and carry out proxy calibration studies. We have focussed on the last glacial to Holocene interval. Three different stations were cored around the Plateau, characterised by high, intermediate and low productivity regimes (M10, M5 and M6 respectively). These sediments were analysed for biomarkers, isotope ratios and trace metals. During the last glacial, and compared to Holocene values, diatom biomarker abundances increase South of the Plateau, whereas they decrease to the North. Biomarker values remain similar through time in the intermediate productivity site. This is supported by $Ba_{x.s}$ as well as $\delta^{13}C_{org}$ values. Ongoing work will determine the degree of sediment focussing in this region to confirm the trends implied by biomarker and barium abundances. If these are robust, the elevated glacial diatom biomarker and increased $Ba_{x.s}$ values are consistent with a northward migration of the Polar Front for the last glacial and thus, a change in the biogeochemical cycling of the Southern Ocean around the Plateau for that period. This study will help to understand the impact of the Crozet Plateau on the Holocene biological pump, providing better insight into Southern Ocean productivity and how it changes on glacial-interglacial timescales.