



## **The transition from Marine Isotope Stage 6 to 5 at ODP Hole 1198 (Leg 194-Marion Plateau, Australia): micropaleontology and geochemistry.**

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We present a micropaleontological and geochemical study of the transition between Marine Isotope Stage (MIS) 6 to 5 (Late Pleistocene) representing the passage from a glacial to an interglacial period of sediments recovered by ODP Leg 194, Hole 1198A on the Marion Plateau. This study is based on phosphorus and stable isotope geochemistry, mineralogical analyses and, on quantitative abundance data of planktonic foraminifera and calcareous nannofossils

The stratigraphic framework is based on (1) calcareous nannofossils and in particular on the first occurrence of *Emiliana huxleyi*, which marks the base of Zones NN21 of Martini (1971) at 6.6 mbsf and on the *E. huxleyi* acme Zone, which in tropical areas occurs at 85 kyr (e.g., Thierstein et al., 1977). (2) Oxygen isotope stratigraphy; (3) bulk carbonate record, which confirm the age attribution of the studied interval.

The glacial interval MIS6 at ODP Hole 1198A records high abundances of the surface dwelling planktonic foraminifera *Globigerinoides ruber*, as also previously observed in glacial stages by e.g., Reiss and Hottinger (1984), and high abundances of the deep dwelling species *Truncorotalia truncatulinoides* and *Globorotalia menardii*. The high concentrations of iron, detrital phosphorus and quartz, suggest an increased input of terrigenous material into the ocean during this glacial stage.

High abundances of *Globigerina bulloides* characterize the transition MIS6 to MIS5

suggesting increased nutrient input. *Truncorotalia truncatulinoides* and *G. menardii* drastically decrease in abundance suggesting a thermocline deepening and a thicker mixed layer. This trend is accompanied by an increased total carbonate content in MIS5 sediments. The good correspondence between micropaleontological and geochemical proxies recorded in this study, suggests a causal link between all factors controlling their abundance and distribution, establishing a framework for their intercalibration.

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#### References

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