

Smetacek, Victor; de Baar, Hein JW; Bathmann, Ulrich; Lochte, Karin; Rutgers van der Loeff, Michiel M (1997): Ecology and biogeochemistry of the Antarctic circumpolar current during austral spring: Southern Ocean JGOFS Cruise ANT X/6 of R.V. Polarstern. *Deep-Sea Research Part II-Topical Studies in Oceanography*, **44(1-2)**, 1-21, doi:10.1016/S0967-0645(96)00100-2

Documentation of Biometal files

25. Iron-plankton interactions (incl. trace element distributions)

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Iron as growth limiting factor

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At several stations large batches of seawater were collected with precleaned, modified GoFlo samplers mounted either on the all-teflon coated CTD/Rosette frame or on a 10mm kevlar hydrowire. Immediately upon recovery the samplers were attached to the outside of the thermostated clean air incubation van. Then teflon tubing was connected as to lead the seawater inside the clean environment where it was collected into acid cleaned, seawater preconditioned, polycarbonate culture vessels of various sizes ranging from 1 to 20 liters.

The data presented in the files BIOMETA?.XLS hold the results of the chlorophyll a and nutrient analyses belonging to the experiments described in the paper by van Leeuwe et al. on “Iron enrichment experiments in the Southern Ocean ... “ These data were used to calculate nutrient uptake rates and rates of chlorophyll a synthesis.

Some remarks:

- “control” stands for the unamended control bottles, “Fe” stands for the bottles enriched with 2 nM Fe.
- Chlorophyll a data are expressed in $\mu\text{g} \cdot \text{dm}^{-3}$.
- Nutrient data are expressed in $\mu\text{mol} \cdot \text{dm}^{-3}$.
- Phosphate data have to be corrected by multiplication with a factor of 1.04

Uptake rates and rates of synthesis were calculated by linear regression of a semi-log plot of chlorophyll a concentrations and nutrient consumption during exponential growth versus time. The slope of the semi-log regression provides the desired rate (d^{-1}) of chlorophyll a synthesis and nutrient uptake respectively.