

Metadata Details

Title

Seasonal Variation in Particulate Organic Matter and its Constituent Fractions under the Ice covered sea near the Shelf, Antarctica.

Science Keywords

Category	Land Surface
Topic	Cryosphere
Expedition Year	1985-1986
ISO Topic	Trace metals

Summary

Abstract

Particulate organic matter (POM) collected at a single station in the shelf waters of Princess Astrid coast (70°S : 11°E), Antarctica from May to December 1986 was analyzed for chl a, POC and other constituent fractions at three discrete depths. Chl a concentration at all the 3 depths varied from 0.026 to 0.253 µg l⁻¹ showing minimum values during August-September. POC values varied from 280 to 1058 µg l⁻¹ while its constituent fractions such as particulate carbohydrates (PCHO), particulate proteins (PP) and particulate lipids (PL) varied from 14 to 193, 6 to 200 and 8 to 174 µg l⁻¹, respectively. Significant correlation existed between POC and chl a, PP and PL at 10m depth. This was in contrast to PCHO and chl a. The components studied showed seasonal variation suggesting that the sea ice microalgae and planktonic organisms contribute substantially to particulate organic carbon.

Purpose

Very little information is available on the biology of ice covered sea around the Antarctic continent (Bunt, 1960; Littlepage, 1965; Wakatsuchi, 1982). In spite of this the Antarctic Ocean is considered most productive oceans in the world (Nienhuis, 1981) not only from the chlorophyll data but also from the compounds present in the water column (Bolter and Dawson, 1982). These compounds are of primary importance to maintain chemical and biological processes in the oceans (Leventer and Dunbar, 1985).

Data Center