

Metadata Details

Title

Strati-graphic Studies of Antarctic Ice.

Science Keywords

Category	Cryosphere
Topic	Snow/Ice
Expedition Year	1983-1984
ISO Topic	Geodesy

Summary

Abstract

For the stratigraphic studies of Antarctic ice which has an accumulation record of thousands of years various methods were attempted viz (i) direct measurement through a network of stakes (ii) differentiation of accumulated layers through difference in stratigraphic character (iii) establishment of reference horizon through radioactive fall out and (iv) the O₈/O₆ and D/H values of the deposited snow and ice. On the basis of stratigraphic and physical characters Antarctica ice core study revealed two categories (i) ice or depth hoar which shows compaction larger crystal grains greater hardness and dull grey to green colour and (ii) firn which is less compact with smaller grain size and white to off white colour. In addition to these major stratigraphic layers 1.5 cm thick sandy layer about 36 cm below the ice surface was also accorded in one bore hole.

Purpose

Our methods were applied to calculate the rate of accumulation and age of the ice in various sectors of Antarctica (i) direct measurement through a network of stakes (ii) differentiation of accumulated layers through difference in stratigraphic character, (iii) establishment of a reference horizon through radioactive fallout (artificial activity measurement) (In case of Antarctica 1954 or early 1955) and (iv). The O₈/O₆ ratio of the deposited snow, giving the temperature at which snow has formed and thus delineating summer and winter layers. It was possible to probe only a few meters of the surface of this ice cover.

Data Center