

Metadata Details

Title

Monitoring of Icebergs in Antarctic Waters and A Note on the Secular Movement of Dakshin Gangotri Glacier.

Science Keywords

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|-----------------|---------------------|
| Category | Cryosphere |
| Topic | Glaciers/Ice Sheets |
| Expedition Year | 1989-1990 |
| ISO Topic | Geodesy |

Summary

Abstract

Iceberg monitoring in the Antarctic waters, during onward and return cruise of Ninth Indian Antarctic Expedition, has revealed concentration of icebergs in two well defined zones separated by an iceberg free zone, in between. Distribution pattern and the analyses of size-shape parameters of these icebergs have shown that the majority of large sized (> 500m), tabular icebergs are concentrated in the area close to the Antarctic coastline as compared to the pinnacled and/or disintegrating icebergs (of < 500 m class) which show relative abundance between the S 51 ° and S 60° latitudes. A marked similarity in the distribution patterns of the icebergs during successive voyages has been noticed. Monitoring of the snout of Dakshin Gangotri glacier during austral summer of 1991 and its comparison with the results of earlier studies reveals minor oscillation of the frontal part of snout and the proglacial lake at the foot of this snout.

Purpose

Large blocks of ice, calved from the ice shelf or derived from the glacier tongues are termed as icebergs. As per an estimate, nearly 5000 icebergs of varying dimensions are produced annually in Antarctica. Those of the icebergs which are not grounded, float in the southern ocean waters, governed by the circumpolar currents and the strong Antarctic wind patterns, causing navigational hazards. Monitoring of the icebergs visually and by satellite imagery has become an integral part of glaciological studies as this provides an important input to the overall mass balance studies of Antarctic icesheet. Iceberg monitoring was carried out during the onward and return voyages of the Ninth Indian Antarctic Expedition as per the guidelines of Norsk Polar Institute (Norwegian Polar Research Institute). It included recording of location, dimensional aspects like size, shape, tilt etc. and the study of morphological characteristics of icebergs encountered along the cruise.

Data Center