

**DYNAMICS OF SCHIRMACHER GLACIER, NEAR INDIAN BASE STATION MAITRI,  
DRONNING MAUD LAND REGION, ANTARCTICA**

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Since outlet glaciers play vital role in Earth's dynamics and climatic systems, understanding of the complex dynamics of the glacial system requires fundamental information such as mass balance, depth and temperature of the ice, meteorological conditions, surface velocity vectors, strain rates, surface gradients, changes in the surface elevation, etc. The coastal region of Antarctica is sensitive parts of mass balance studies of Antarctic ice sheets, Schirmacher Glacier near Maitri ( Indian base in Antarctica) an important outlet glaciers in central Dronning Maud Land (cDML) and having major role of contribution in the drainage of east Antarctica.

Global Positioning System has (GPS) proved to be one of the most effective methods to measure the glacier velocity. To facilitate the above study, three GPS campaigns were made during the summer season at eastern Antarctica on 2003 and 2005. GPS data were collected at 21 site network have been analyzed to estimate the site co-ordinates, baselines, velocity and strain distribution. The velocity of the sites found to lie between  $1.9 - 10.9 \text{ m yr}^{-1}$  in NNE direction and the average velocity of the ice stream over the study region is  $6.2 \text{ m yr}^{-1}$ . The strain distribution estimated over the region shows the extension towards the north-north-east direction in the eastern part of the study area and the compressive regimes are towards the Schirmacher Oasis blockage region. The site velocity distribution spatially correlated to the surface undulation gradients, crevasses, and blockage of Schirmacher Oasis. In this paper, we discuss the glacier velocity and strain field derived from GPS and study the characteristics of Schirmacher glacier.