

Metadata Details

Title

Satellite-based DEM for monitoring Antarctic ice topography, with special focus on-A Applications of high resolution Cartosat -1/2 and RISAT-1 satellite remote sensing data for Extraction of Polar Spatial Information

Science Keywords

Category	Cryosphere
Topic	Sea Ice
Expedition Year	2011-2012 2013-2014
ISO Topic	Environment

Summary

Abstract

This project will focus on the generation of highly accurate DEM of Schirmacher Oasis near Maitri region using Cartosat, ICES at, SAR and ground GPS values for assessment of the sea ice thickness and the mechanical processes that influence ice thickness measurements. While this is the main topic of the proposed research, the uncertainties that were observed or shown by the previous researchers will be investigated so that a correct estimation may be reported for the thickness of the sea ice. A period of 12 years elapsed between the first ground traverse survey in the year 1991 by SOI in the region of Maitri and Environments and the GLASS measurements, which started in February 2003 consequently, it is necessary to correct for changes in surface height over this period due to snow accumulation/ ablation.

Purpose

Generation of highly accurate DEM of Schirmacher Oasis near Maitri by using precise SAR, ICES at/ GLAS and ASTER GDEM. To generate accurate land cover maps of Schirmacher Oasis and Larsemann hills using high resolution remote sensing data from world view-2 and Cartosat data. To generate a semi-automatic method for land cover feature extraction using very high resolution satellite remote sensing data. To quantify and study the trends in evolution changes from 2005 to 2013, height variation detection at Schirmacher Oasis from ICSE at altimetry and previously collected data (XXXI ISEA). To compare and quantify the change in elevation values of ICES at base DEM with topographic DEM of year 1992 and 1999. To validate existing conventional DEM?s using GPS Survey and SAR DEM?s.

Data Center