

Monitoring of Ice sheet marginal zone using multi-frequency SAR data

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Environment of Antarctic continent and ice sheet marginal zone is quite important for understanding the mass balance of ice, formation of deep ocean water and other cryospheric phenomena. Previous study showed the usefulness of SAR data to understand what is happen on the boundary area between ice sheet and ice shelf by SAR data analysis, and achieved the mapping of ice sheet surface velocity mapping. In recent, many kinds of satellite equipped SAR sensor plan to launch and these data are available through the scientific Research Announcement (RA) or Announcement of Opportunity (AO).

Based on these facts, this study focuses on the use of multi-frequency SAR data for ice sheet marginal zone monitoring. Especially, we focus on the use of InSAR analysis for grounding line extraction, ice flow velocity mapping by offset tracking, and understanding the image feature difference through the interpretation of X-, C- and L- band SAR data. We use X-band data by TerraSAR-X, C-band data by ENVISAT and ERS-1/2, and L-band data by ALOS/PALSAR data. Then, we will try to describe the applicability and prospectives of ALOS-2 / PALSAR-2 data

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