

# 合成開口レーダーを用いた南極氷床域の氷流速度マッピング -InSAR 手法および offset tracking 手法の統合結果-

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## Regional high-precision ice flow velocity mapping on Antarctic ice sheet using SAR data -Integrated result of InSAR and offset tracking methods-

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Synthetic Aperture Radar (SAR) is an effective tool to estimate the ice flow velocity on Antarctic ice sheet and glaciers. Examples of the estimating method using SAR data are Differential Interferometric Synthetic Aperture Radar (DInSAR), Split Beam Interferometry (SBI) and offset tracking. DInSAR and SBI methods can estimate the velocities of gently ice flow on ice sheets and upstream area of glaciers with high ground resolution (several meters), but it is inadequate to observe the large displacement exceeding one pixel size of SAR image. Offset tracking method is suitable for estimating the fast ice flow, but the displacement image obtained by this method has low ground resolution (more than 100 m). Therefore, by combining these methods selectively according to the ice flow velocity, it allows us to make an ice flow velocity map over wide area of Antarctic continent.

In this study, we aim to generate the ice flow velocity map with high precision using DInSAR, SBI and offset tracking methods. The study area is the ice sheet and glacier area in the southern part of Sôya Coast, East Antarctica. Since this area includes the ice sheet and some glaciers such as the Skallen glacier and Telen glacier, it is considered that this region covers the wide range of the ice flow velocity targeted by DInSAR, SBI and offset tracking methods.

We used 13 pairs of ALOS/PALSAR data and 2 pairs of ALOS-2/PALSAR-2 data, acquired during the period from November 2007 through January 2011 and from April 2014 through May 2015, respectively. We used Gamma software for these analyses.

In this presentation, we will show the combined ice flow velocity map with high precision and introduce the future prospects of using this map.