

Detection characteristics of grounding line by ALOS-2 InSAR

*Tutomu Yamanokuchi¹, Koichiro Doi², Kazuki Nakamura³, Shigeru Aoki⁴

1. Remote Sensing Technology Center of JAPAN, 2. National Institute for Polar Research, 3. Nihon University, 4. Institute for Low Temperature Science, Hokkaido University

ALOS-2 has been in operation smoothly for nearly four years since its launch. An area where the observation mode / beam is fixed at the observation in the polar region is also set, and acquisition of data suitable for analysis effective for understanding ice mass balance such as InSAR and Offset Tracking is being realized. Based on these background, the authors who have been conducting grounding line detection using L-band SAR in advance, have had strong expectations for ALOS-2. However, as a result of 4-pass InSAR analysis using several 14-day and 28-day time difference ALOS-2 data, although the coherence is sufficiently high, the grounding line is not detected and the situation that the fringe does not come out is encountered. This may be due to the fact that the period of M2 and Mm tidal constituent, which was pointed out in before the launch of ALOS-2, is very close to the multiple of the revisit cycle of ALOS-2. In this study, we verify the tidal amplitude again from the tidal model for pairs where no Grounding Line was detected. At that time, we also consider the local tidal effects and confirm whether similar phenomena have occurred not only in the East Antarctica that had been targeted but also in the West Antarctica and Greenland. In addition, we will conduct grounding line detection in the same area using Sentinel-1, and will also conduct comparative verification.

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