# Explanation of PALSAR-3 images with variable PRF and fixed PRF

Update: May 26, 2025

- ALOS-4 adopts the new digital beamforming SAR (Synthetic Aperture Radar) technology to expand the observation swath from ALOS-2. The ALOS-4 is planned to conduct observations with the “Variable PRF[*1]” function turned on in order to produce continuous images over a wide area. However, JAXA have confirmed that when this function is turned on, false image noise (ambiguity) is generated in some observation areas.
- As an immediate countermeasure, ALOS-4 observation will be conducted using “Fixed PRF” function in some cases.
- In the “fixed PRF” observation, the above false images do not occur, although a blind area of about 10 to 20% is generated in the image.
- JAXA will continue to adjust the image quality and will issue updates as necessary.

[*1] PRF (Pulse Repetition Frequency): The number of times per second that radio waves are transmitted and received for observation. ALOS-4 employs a variable PRF system to avoid the overlap of transmission and reception caused by DBF and to obtain continuous images over a wide area.

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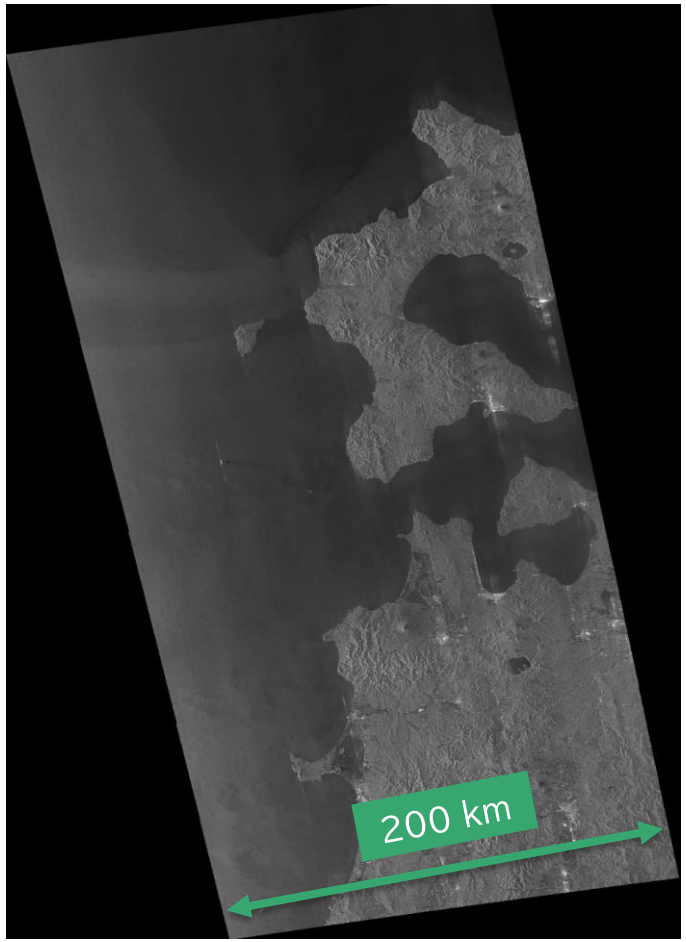
Stripmap 3 m
200 km swath
Japan
HH-pol.

Satellite direction (Azimuth)

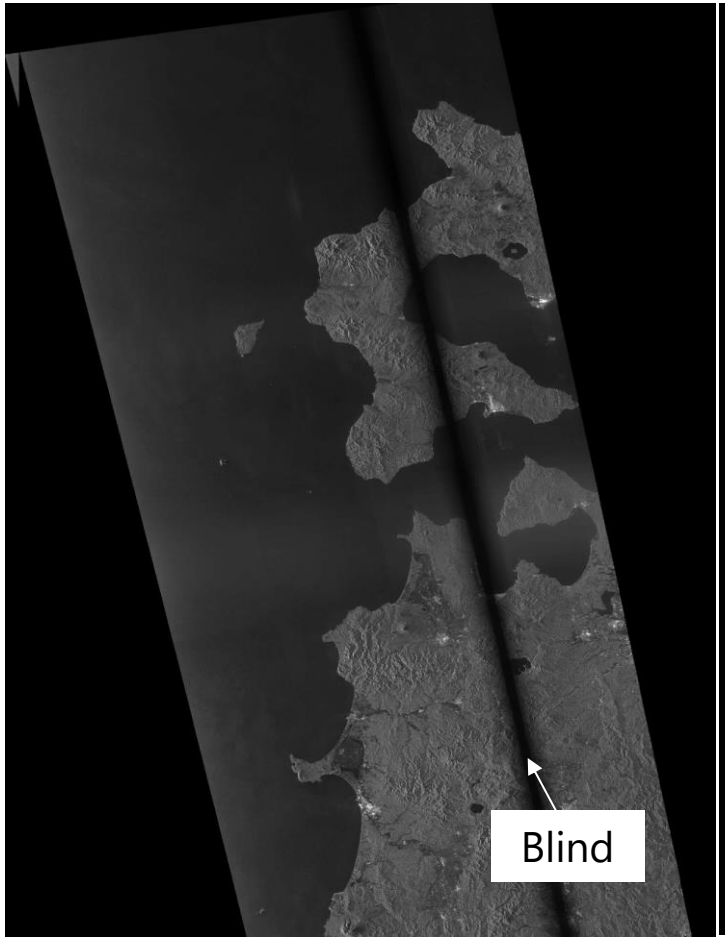
Transmission (Range)

ALOS-4

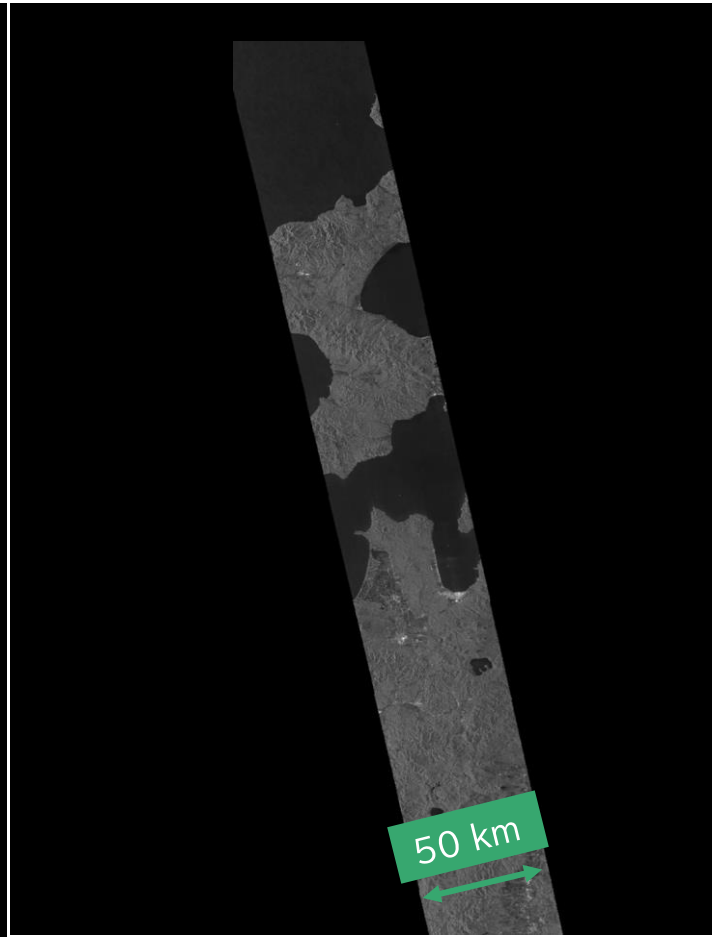
**Feb. 5, 2025 (Valuable PRF)**




**Feb. 19, 2025 (Fixed PRF)**




ALOS-2



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**Notes on Product Use**

- Standard products by fixed PRF observation can be identified by the scene ID in the file name below.

**Scene_ID = ALOS41112222YYMMDDUWDPRA0106**

| Satellite name | Path# | Frame# | Obs. date | Mode | Right/Left, Ascending/Descending, Beam# |
|---|---|---|---|---|---|

If "P", fixed PRF observation

Nominal observation is "_" (under bar)

- The confirmation method in the absence of a browse image is under consideration.