

## ALOS-2 / PALSAR-2 data processing for the entire observation period

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### ● Abstract

Processing the synthetic aperture radar (PALSAR / PALSAR-2) data acquired by the terrestrial observation technology satellites `` DAICHI " and `` DAICHI-2 " to generate user-friendly image products (Analysis Ready Data), Make an offer.

### ● Reasons and benefits of using JAXA Supercomputer System

JAXA is developing data disclosure to expand the use of earth observation satellite data.

As part of this, JAXA needs to process a large amount of data for the entire observation period of ALOS-2 / PALSAR-2, and quickly release user-friendly image data.

To achieve this, JSS2 processing was optimal, so we used it.(Up to 50 parallel processing)

### ● Achievements of the Year

This year, JSS3 processing of PLASAR-2 data is

L1.1: 157,678 scenes

L2.2: 197,309 scene

Total: 354,987 scenes

Regarding ScanSAR data, all recent data (until 2023.02) have been processed for both L1.1/L2.2.

SM2 and SM3 were also treated experimentally.

Replaced the L2.2 slope ortho correction processing tool (high-speed program) implemented last year, conducted the test. It was necessary to set the memory size (vnode-mem) to be used larger than before (to 84GiB), It succeeded in speeding up the processing itself.

Data that have been archived or processed this year are

(1) Get JSS-ID from institution and download from JSS (get by user)

Example: Acquisition of PALSAR-2 ScanSAR L1.1 by NASA-ASF

(2) Transmission via server (put from JAXA)

Example: 792 TB of PALSAR-2 L1.1@Africa Great Rift Valley data to AIST/ABCI continued from last year via the Chofu transmission relay server and completed on 2023/02/01.

(3) Transmission to the G-Portal server via the data transmission server in order processing on the G-Portal (get by the G-Portal user)

(There are orders for more than 2000 scenes.)

provided by the route of

We also conducted a test to transmit the ALOS-2 L0 data archived in JSS3/J-SPACE to the ALOS-4/EICS slave system.

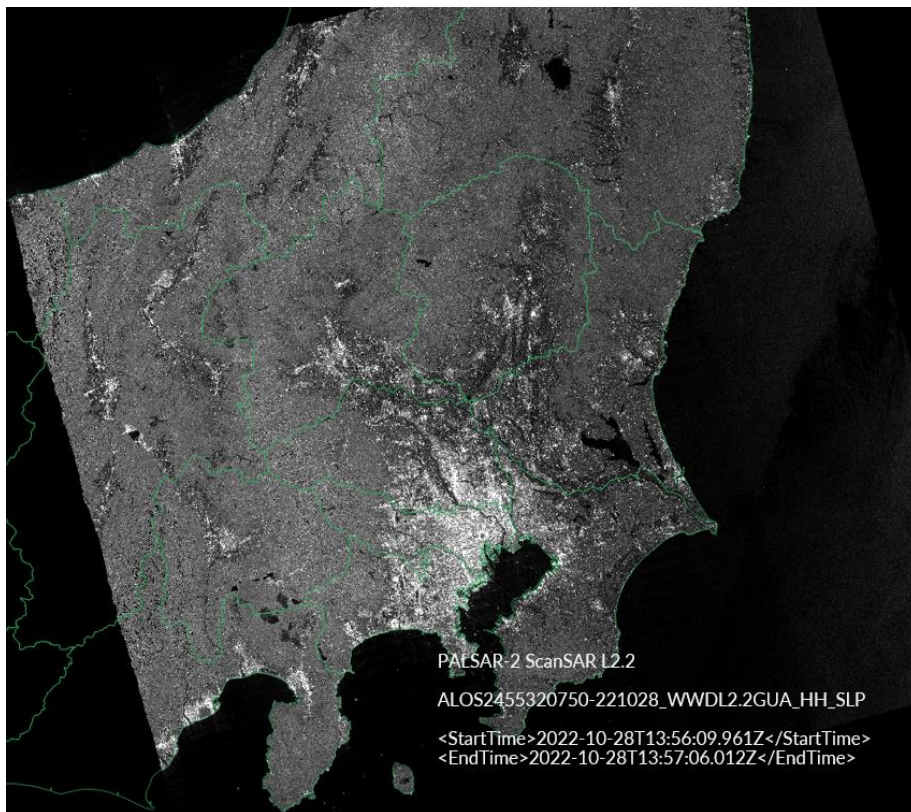


Fig. 1: PALSAR-2 ScanSAR L2.2 processed image example

## ● Publications

- Oral Presentations

At the Pecora 22 Workshop 2C: Improving Global EO Data Access, we gave a presentation on the use of 100% processed data processed with JSS.

● **Usage of JSS**

● **Computational Information**

Process Parallelization Methods	N/A
Thread Parallelization Methods	OpenMP, pthread, boost::thread
Number of Processes	1
Elapsed Time per Case	1 Hour(s)

● **JSS3 Resources Used**

Fraction of Usage in Total Resources\*1(%): 0.70

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage *2(%)
TOKI-SORA	0.00	0.00
TOKI-ST	5,462,966.90	5.46
TOKI-GP	31,766.65	1.35
TOKI-XM	0.00	0.00
TOKI-LM	8.89	0.00
TOKI-TST	0.00	0.00
TOKI-TGP	0.00	0.00
TOKI-TLM	0.00	0.00

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage* <sup>2</sup> (%)
/home	320.00	0.29
/data and /data2	112,586.67	0.87
/ssd	2,456.67	0.34

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage* <sup>2</sup> (%)
J-SPACE	5,383.15	23.86

\*1: Fraction of Usage in Total Resources: Weighted average of three resource types (Computing, File System, and Archiver).

\*2: Fraction of Usage : Percentage of usage relative to each resource used in one year.

● **ISV Software Licenses Used**

ISV Software Licenses Resources		
	ISV Software Licenses Used (Hours)	Fraction of Usage* <sup>2</sup> (%)
ISV Software Licenses (Total)	0.00	0.00

\*2: Fraction of Usage : Percentage of usage relative to each resource used in one year.