

## 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 100 parallel processing)

### ● Achievements of the Year

This year, the processing of PALSAR-2 data with JSS3 is as follows:

L1.1:23618 scenes

L2.2:21242 scenes

Total: 44860 scenes

Data that has been archived or processed this year has been provided to other system users.

1)Ask the user institution to obtain a JSS-ID and download it from JSS (obtained by the user)

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

2)Transmission via server (put from JAXA)

Asia region L2.2 transmission via Chofu transmission relay server to Sakura Internet/Tellus

L2.2 transmission in Asia, Africa, and Central and South America via Chofu transmission relay server to GEE

3) Transferred to G-Portal server via data transmission server during order processing on G-Portal (obtained by G-Portal user)

PALSAR-2 L1.1 (11345 scenes), L2.2 (1949 scenes) by the end of February 2024

4) From J-SPACE to ALOS-4/EICS (subsystem)

PALSAR-2 L0 data

In addition, for program verification, we replaced MDPS on JSS3 and conducted a test process.

● **Publications**

N/A

● **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(%): 0.16

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage*2(%)
TOKI-SORA	0.00	0.00
TOKI-ST	1,244,309.20	1.34
TOKI-GP	0.00	0.00
TOKI-XM	0.00	0.00
TOKI-LM	0.00	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	182.50	0.15
/data and /data2	111,083.33	0.69
/ssd	836.67	0.08

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage* <sup>2</sup> (%)
J-SPACE	7,618.31	27.45

\*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.