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, JSS3 processed PLASAR-2 data for the period from 2024/3/1 to 2025/1/16.

L1.1:16,824 scenes

L2.2:15,090 scenes

Total:31,914 scenes

5,312 playback IDs were processed.

In addition, 30,944 playback IDs were processed for the period from 2020/1/1 to 2024/6/30 as a reprocessing of past data.

Data that has been archived or processed this year was provided to other system users.

1. User institutions obtain JSS-IDs and download from JSS(get by users)

-Get PALSAR-2 ScanSAR L1.1 by NASA-ASF

2. Transmit via server (put from JAXA)

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

-Global L2.2 transmission to GEE via Chofu transmission relay server

-Global L2.2 transmission to AWS via Chofu transmission relay server (partial period)

-India region L2.2 transmission to Sakura FTP server via Chofu transmission relay server for ISRO

3. Transmit to G-Portal server via data transmission server when processing orders on G-Portal (get by G-Porta user)

-From April 2024 to the end of October 2024, PALSAR-2 L1.1 (17,784 scenes), L2.2 (3,658 scenes), and PALSAR L1.1 (1,631 scenes), AVNIR-2 (41 scenes)

However, from October 24, 2024, the operator will provide PALSAR-2 L1.1 instead. By January 27, 2025, 1,125 scenes will be transmitted to the Sakura FTP server

4. From J-SPACE to ALOS-4/EICS (secondary system)

-PALSAR-2 L0 data

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](%): 0.28

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage[*2](%)
TOKI-SORA	0.00	0.00
TOKI-ST	2,411,034.49	2.47
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*2 (%)
/home	182.50	0.12
/data and /data2	111,483.33	0.53
/ssd	836.67	0.04

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage*2 (%)
J-SPACE	8,322.61	27.19

*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*2 (%)
ISV Software Licenses (Total)	0.00	0.00

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