Development and maintenance of mission operation system for AMSR3 onboard the GOSAT-GW satellite

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Abstract

Advanced Microwave Scanning Radiometer 3 (AMSR3) is installed on the Greenhouse Gases and Water Cycle Observing Satellite (GOSAT-GW), which is currently under development.

It is a sensor for the purpose of observing microwaves naturally radiated from the surface of the earth, the surface of the sea, the atmosphere, etc.

AMSR3 has an enhanced observable wavelength band compared to AMSR2 onboard SHIZUKU, and will be able to observe snowfall and water vapor on land.

We are currently developing a processing system (AMSR3 mission operation system) on JSS3 to create products from data observed by AMSR3.

The purpose of this project is to recreate the products using this system and the improved algorithm after the AMSR3 observation starts, and to provide these products to the users in a short period of time.

Ref. URL: https://www.satnavi.jaxa.jp/ja/project/gosat-gw/index.html

Reasons and benefits of using JAXA Supercomputer System

By using JSS3, which has a large-scale and high-performance processing environment, for a short period of time and intensively to recreate the vast amount of AMSR3 data observed in the past, the recreated product can be delivered to the user in a short time.

Achievements of the Year

The AMSR3 mission operational system is currently under development.

In FY2023, various confirmation tests regarding functions and data IF were conducted using the environment

built in FY2022.

- **Publications**

  N/A

- **Usage of JSS**

- **Computational Information**

Process Parallelization Methods	N/A
Thread Parallelization Methods	OpenMP
Number of Processes	1
Elapsed Time per Case	48 Hour(s)

- **JSS3 Resources Used**

Fraction of Usage in Total Resources[*1](%): 0.00

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage[*2](%)
TOKI-SORA	0.00	0.00
TOKI-ST	23,675.66	0.03
TOKI-GP	7.55	0.00
TOKI-XM	0.00	0.00
TOKI-LM	34.00	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	490.00	0.41
/data and /data2	9,900.00	0.06
/ssd	5,020.00	0.47

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage*2 (%)
J-SPACE	0.01	0.00

*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.