

Greenhouse gases Observing SATellite-2 (GOSAT-2) Project

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Subject Category: Space Technology

URL: <https://www.jss.jaxa.jp/en/ar/e2018/9162/>

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● Abstract

GOSAT-2 project retrieve and estimate the global concentration distribution of major greenhouse gases including the sources and natural absorbers with high level of accuracy to contribute to environmental administration as follows.

- Improved precision of climate change predictions
- Early detection of changes in the Earth system
- Better understanding of emission reduction level of the anthropogenic greenhouse gases and changing natural sink
- Contribution to air pollution monitoring policies

Also, GOSAT-2 project researches and develops new earth observation technologies required for future earth observing satellites.

Ref. URL: <http://global.jaxa.jp/projects/sat/gosat2/>

● Reasons for using JSS2

GOSAT-2 project utilizes JSS2 as one of the GOSAT-2 Mission Operation System which processes the observation data of GOSAT-2. When processing algorithm is updated, JSS2 reprocesses all data observed in the past. Also, JSS2 is used as a remote storage of all data required for its reprocessing.

As the reprocessing targets of GOSAT-2 products extends to all data observed in the past, more computer resources (core, memory, storage, etc.) are required than in the real-time processing.

It is necessary to use JSS2 to shorten the reprocessing time and to provide the reprocessing products to GOSAT-2 users more quickly.

● **Achievements of the Year**

1, In the development and testing process of GOSAT-2 Mission Operation System, G2MOS, tests below have been completed.

- Ground system integration test
- End-to-End test
- Final pre-launch test

2. The file transfer from G2MOS to JSS2 started after GOSAT-2 launch. No interface troubles between G2MOS and JSS2 have occurred.

● **Publications**

N/A

● **Usage of JSS2**

● **Computational Information**

Process Parallelization Methods	N/A
Thread Parallelization Methods	OpenMP
Number of Processes	1
Elapsed Time per Case	5 Minute (s)

● **Resources Used**

Fraction of Usage in Total Resources*1 (%): 0.13

Details

Computational Resources		
System Name	Amount of Core Time (core x hours)	Fraction of Usage*2 (%)
SORA-MA	0.00	0.00
SORA-PP	73,710.34	0.59
SORA-LM	0.00	0.00
SORA-TPP	0.00	0.00

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage*2 (%)
/home	151.32	0.16
/data	100,682.62	1.78
/ltmp	30,989.60	2.65

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.