

## Utilization of JSS2 for AMSR-E higher level data processing

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### ● Responsible Representative

takeshi hirabayashi, Director of The Satellite Applications and Operation Center

### ● Contact Information

Kazuyoshi Hirano(hirano.kazuyoshi3@jaxa.jp)

### ● Members

Yuji Taniguchi, Masaya Torii, Tadahiro Yamamoto, Sachiko Kawase, Daichi Obinata, Kentaro Koyama, Makoto Imanaka, Kazuaki Nonaka, Junichi Tsukamoto, Katsunori Iijima, Shingo Yokoyama, Osamu Motohashi, Toshiyuki Konishi, Sachi Kawamoto

### ● Abstract

AMSR-E\*1, AMSR2\*2 estimates various geophysical parameters by measuring radio waves in the weak microwave band radiated from the Earth's surface and the atmosphere with multiple frequencies and multiple polarizations.

Geophysical parameters include water vapor, cloud liquid water, precipitation, sea surface temperature, sea surface wind speed, sea ice concentration, snow water equivalent, and soil moisture.

The long-term geophysical record will play an important role in climate change monitoring and will provide valuable information for understanding the Earth's climate system, including water and energy circulation.

We will reprocess and provide AMSR-E high level product and AMSR2 high level product with the same algorithm (including improved algorithms), and provide a long-term data set useful for users.

\*1 : Advanced Microwave Scanning Radiometer for EOS equipped in Earth Observation Satellite 'Aqua'

\*2 : The Advanced Microwave Scanning Radiometer 2 equipped in Global Change Observation Mission - Water "SHIZUKU" (GCOM-W)

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

By using JSS2 with a large scalability processing environment and executing processing of enormous scenes in parallel, it becomes possible to provide products to users more quickly.

### ● Achievements of the Year

In this fiscal year, the improvement result of the sea surface temperature (SST) and sea wind speed (SSW) algorithm were reflected in the reprocessing environment. We also conducted reprocessing of L2\*3 and L3\*4 products during the observation period.

AMSR2 reprocessed products has been released from the data provision system (G-Portal) .

\*3 : Product storing information on geophysical quantity which calculated through the physical quantity estimation algorithm. And the product is stored the position information of the data and the information on the quality.

Note that map projection of the geophysical quantity is not performed.

\*4 : Product mapped with time and spatial average values of geophysical quantities. The product is stored the daily average and monthly average global distribution of the brightness temperature and each physical quantity.

● **Publications**

N/A

● **Usage of JSS**

● **Computational Information**

Process Parallelization Methods	N/A
Thread Parallelization Methods	N/A
Number of Processes	1
Elapsed Time per Case	3 Second(s)

● **Resources Used(JSS2)**

Fraction of Usage in Total Resources<sup>\*1</sup>(%): 0.07

Details

Computational Resources		
System Name	Amount of Core Time (core x hours)	Fraction of Usage <sup>*2</sup> (%)
SORA-MA	0.00	0.00
SORA-PP	4,181.76	0.03
SORA-LM	0.00	0.00
SORA-TPP	0.00	0.00

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage <sup>*2</sup> (%)
/home	137.80	0.13
/data	109,451.29	2.11
/ltmp	15,741.26	1.34

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage <sup>*2</sup> (%)
J-SPACE	26.01	0.86

\*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.

### ● Resources Used(JSS3)

Fraction of Usage in Total Resources<sup>\*1</sup>(%): 0.05

#### Details

Computational Resources		
System Name	Amount of Core Time (core x hours)	Fraction of Usage <sup>*2</sup> (%)
TOKI-SORA	0.00	0.00
TOKI-RURI	889.20	0.01
TOKI-TRURI	0.00	0.00

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage <sup>*2</sup> (%)
/home	199.85	0.14
/data	60,241.09	1.01
/ssd	880.56	0.46

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage <sup>*2</sup> (%)
J-SPACE	26.01	0.86

\*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.