

## Utilization of JSS2 for AMSR-E L1 data processing

Report Number : R17ER1500

Subject Category : Space Technology

URL : <https://www.jss.jaxa.jp/ar/e2017/4460/>

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### ● Abstract

AMSR-E\*1 can estimate 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.

By reprocessing the AMSR-E product in the same format as AMSR2\*2 which is succeeding sensor, we 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)

<http://sharaku.eorc.jaxa.jp/AMSR/index.html>

### ● Reasons for using of JSS2

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, we improved the results such as bias correction of brightness temperature and reprocessed products(L1B, L1R) in all observation periods (2002/06/01 - 2011/10/04). The product is

under registration in the data provision system, and it is released as soon as registration is completed.

The period of reprocessing done in JSS 2 is as follows.

period of reprocessing : 2017/08/08 - 2017/09/15, 2017/11/09

CPU usage time : Approx. 730 hours

Number of products : L1B : 98268 products, L1R : 98268 products

Total Output Product Capacity : L1B : 5.3TB, L1R : 5.3TB

\*3 : Product storing the auxiliary data (geometric information, radiometric information, land/sea flag and supplemental data), and the brightness temperature obtained by converting the engineering value acquired by the observation device using the radiometric correction coefficient.

\*4 : Products that store resampled data of brightness temperature data in products of L1B. The resampling brightness temperature is processed to match the difference of resolution in each frequency.

## Publications

N/A

● Usage of JSS2

● Computational Information

Parallelization Methods	N/A
Thread Parallelization Methods	N/A
Number of Processes	1
Elapsed Time per Case	23.10 seconds

● Resources Used

Fraction of Usage in Total Resources\*1 (%): 0.07

Details

Computing Resources		
System Name	Amount of Core Time (core x hours)	Fraction of Usage*2 (%)
SORA-MA	0.00	0.00
SORA-PP	8,731.85	0.11
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	115.00	0.08
/data	82,897.13	1.53
/ltmp	12,858.08	0.97

Archiver Resources		
Archiver System Name	Storage used(TiB)	Fraction of Usage*2 (%)
J-SPACE	0.49	0.02

\*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