

## PALSAR-2 Global Water Map

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### ● Abstract

In the previous fiscal year, we conducted trial production in the Asian region, where ALOS-2/PALSAR-2 ScanSAR data are abundant, and were able to produce a high-resolution land-use and land-cover (HRLULC) map of the Asian region with a high overall accuracy of 86.2%. In order to further improve the accuracy, a global water map, which is also effective for LULC classification, was created from ALOS-2/PALSAR-2 data this fiscal year.

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

Accelerating large-scale high-resolution satellite image processing using machine learning with JSS3

### ● Achievements of the Year

The use of JSS3 enabled the classification process, which originally took several days to several months, to be carried out in about one day. This allowed us to conduct many classification trials and create a global water map.

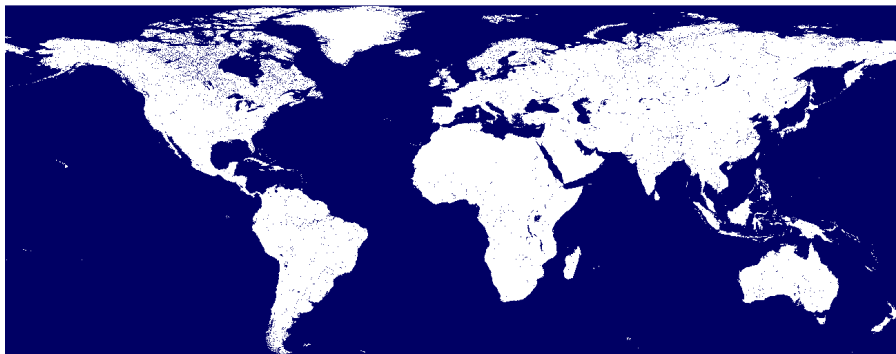


Fig. 1: Global water bodies map in 2010

- **Publications**

N/A

- **Usage of JSS**

- **Computational Information**

Process Parallelization Methods	Parallel execution of shell script with xargs
Thread Parallelization Methods	N/A
Number of Processes	2 - 10
Elapsed Time per Case	10 Hour(s)

- **JSS3 Resources Used**

Fraction of Usage in Total Resources\*1(%): 0.02

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage *2(%)
TOKI-SORA	757.60	0.00
TOKI-ST	65,395.18	0.07
TOKI-GP	22,111.80	0.29
TOKI-XM	7.34	0.00
TOKI-LM	0.00	0.00
TOKI-TST	1.92	0.00
TOKI-TGP	1,015.61	78.16
TOKI-TLM	406.33	1.14

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage* <sup>2</sup> (%)
/home	0.00	0.00
/data and /data2	51,200.00	0.32
/ssd	5,120.00	0.48

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage* <sup>2</sup> (%)
J-SPACE	0.00	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* <sup>2</sup> (%)
ISV Software Licenses (Total)	0.00	0.00

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