



Global Change Observation Mission 1st – Water "SHIZUKU" (GCOM-W1)

1. IDENTIFICATION INFORMATION

Name	Global Change Observation Mission 1st – Water "SHIZUKU" (GCOM-W1)
Metadata Identifier	GCOM_W120230727082527-en

2. CONTACT

2.1 CONTACT on DATASET

Name	Japan Aerospace Exploration Agency GCOM-W1 Data Providing Service Help Desk
E-mail	z-gwlhelp@jaxa.jp

2.2 CONTACT on PROJECT

3. DOCUMENT AUTHOR

Name	Satoko Miura
Organization	JAXA/Mission Operations System Office (MOSS)

4. DATASET CREATOR

Name	JAXA
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5. DATE OF THIS DOCUMENT

2023-07-27

6. DATE OF DATASET

creation : 2013-05-30

7. DATASET OVERVIEW

7.1 Abstract

The Advanced Microwave Scanning Radiometer 2 (AMSR2,) which will be loaded onto the GCOM-W1, is a sensor to observe radiometers, or microwaves emitted naturally from the ground, sea surface and atmosphere, using six different frequency bands ranging from 7 GHz to 89 GHz. The strength

of a natural microwave is determined by its characteristics and moisture, including the surface condition and temperature of the material. Although it depends on the frequency, the microwave is very weak. AMSR2 will detect such weak microwaves at an altitude of 700 kilometers and measure the strength of them with a very high accuracy. For example, by measuring the strength of a microwave emitted from the sea surface with the AMSR2, we can understand the water temperature of the sea surface to an accuracy of 0.5 degrees Celsius.

The antenna of the AMSR2, which receives microwaves from the ground, arc scans the ground surface at a ratio of one turn every 1.5 seconds and observes an area approximately 1,450 kilometers wide in one scan. Using this scanning method, the AMSR2 can observe over 99 percent of the Earth's area in just 2 days. The diameter of the antenna is about 2 meters, making it the world's largest observation sensor aboard a satellite. The height of the rotating part is about 2.7 meters and the weight is about 250 kilograms. The AMSR2 can keep rotating such a large and heavy antenna at a speed of one turn per 1.5 seconds for 24 hours a day and more than five years without a minute of rest.

7.2 Topic Category(ISO19139)

climatologyMeteorologyAtmosphere

oceans

7.3 Temporal Extent

Begin Date	2012-05-18
End Date	Under Continuation

7.4 Geographic Bounding Box

North latitude bound	90
West longitude bound	-180
Eastbound longitude	180
South latitude bound	-90

7.5 Grid

Dimension Name	Dimension Size (slice number of the dimension)	Resolution Unit
		()
		()

7.6 Geographic Description

7.7 Keywords

7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	Atmosphere > Atmospheric Water Vapor > Humidity, Atmosphere > Atmospheric Water Vapor > Water Vapor, Land Surface > Soils > Soil Moisture/Water Content, Atmosphere > Precipitation > Precipitation Amount, Oceans > Ocean Temperature > Sea Surface Temperature, Cryosphere > Snow/Ice > Snow Water Equivalent	GCMD_science

7.7.2 Keywords on Project

7.8 Online Resource

JAXA GCOM-W1 Data Providing Service : <https://gcom-w1.jaxa.jp/auth.html>

7.9 Data Environmental Information

7.10 Distribution Information

name	version	specification
HDF5, NetDF(after format conversion), GeoTIFF(Level3 only, after format conversion), TIFF(Level1m Level2, after format conversion)		

8. DATA PROCESSING

8.1 Data Processing (1)

8.1.1 General Explanation of the data producer's knowledge about the lineage of a dataset

The followings products are available;

[Level1]

Brightness Temperature(L1B, L1R)

[Level2]

Total Precipitable Water

Cloud Liquid Water

Precipitation

Sea Surface Temperature
Sea Surface Wind speed
Sea Ice Concentration
Snow Depth
Soil Moisture Content

[Level13]

Total Precipitable Water
Cloud Liquid Water
Precipitation
Sea Surface Temperature
Sea Surface Wind speed
Sea Ice Concentration
Snow Depth
Soil Moisture Content
Brightness Temperature

8.1.2 Data Source

Data Source Citation Name	Description of derived parameters and processing techniques used
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9. DATA REMARKS

10. DATA POLICY

10.1 Data Policy by the Data Provider

<http://gcom-wl.jaxa.jp/useagreement.html>

10.2 Data Policy by the Project

11. LICENSE

12. DATA SOURCE ACKNOWLEDGEMENT

12.1 Acknowledge the Data Provider

12.2 Acknowledge the Project

13. REFERENCES