

# Training session –GSMaP–

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# Training session –GSMaP –

- *Overview of GSmMaP*
- *Introduction of use cases*
- *Algorithm of GSmMaP*

~Q&A~

☕ Break ☕

- *Demonstration of the GSmMaP website*
- *Data access and tools*

} 25 mins

~Q&A~







**GSMaP**  
GLOBAL SATELLITE MAPPING OF PRECIPITATION

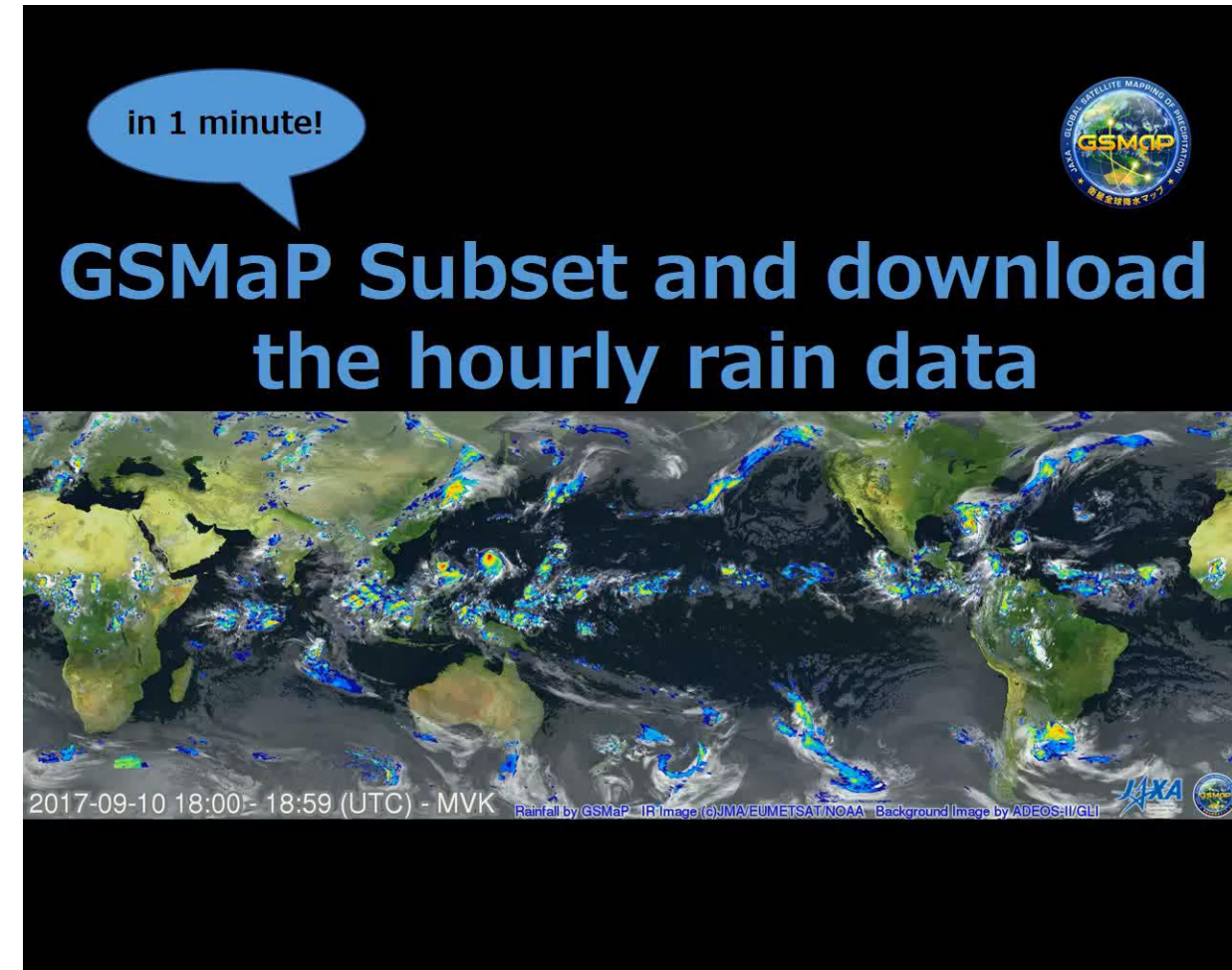
# Demonstration of the GSMaP website

How to use GSMP website in 1 minute!



<https://youtu.be/0JanK-fZMt4>

GSMP subset and download hourly rain data in 1 minute!



<https://youtu.be/VnxH7inZh6g>



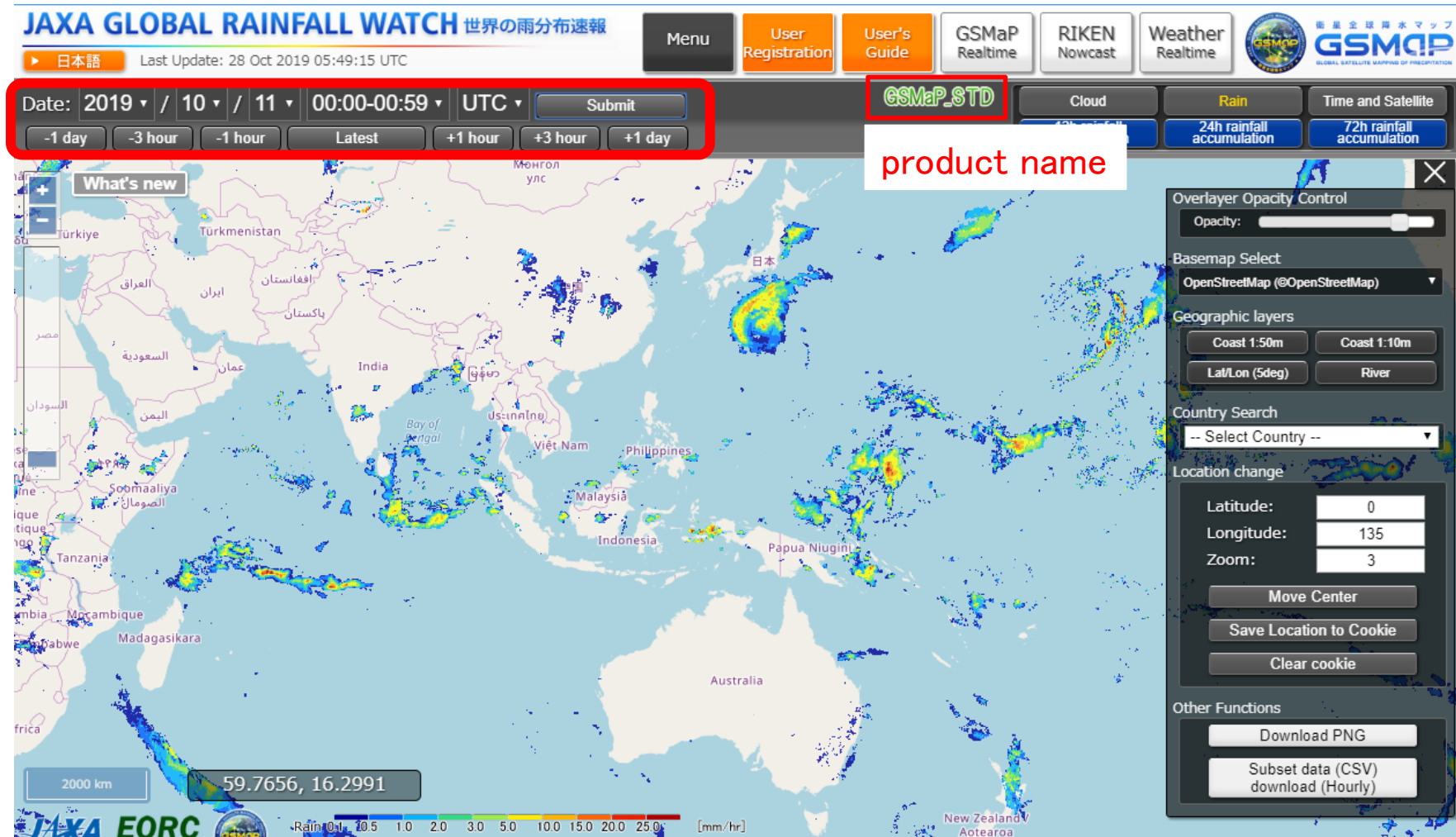
- For users who would like to **monitor precipitation in realtime**  
...[JAXA REALTIME RAINFALL WATCH](#)  
You can see global precipitation map, updated **every 30 minutes**.
- For users who would like to see **precipitation in the past specific date**  
...[JAXA GLOBAL RAINFALL WATCH](#)  
You can see hourly global precipitation map **since March 2000**.
- For users who would like to see **daily or monthly precipitation**  
...[JAXA CLIMATE RAINFALL WATCH](#)  
You can see indices related to **extreme heavy rainfall and drought** as well as accumulated precipitation.





# GSMaP website [png]

<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>

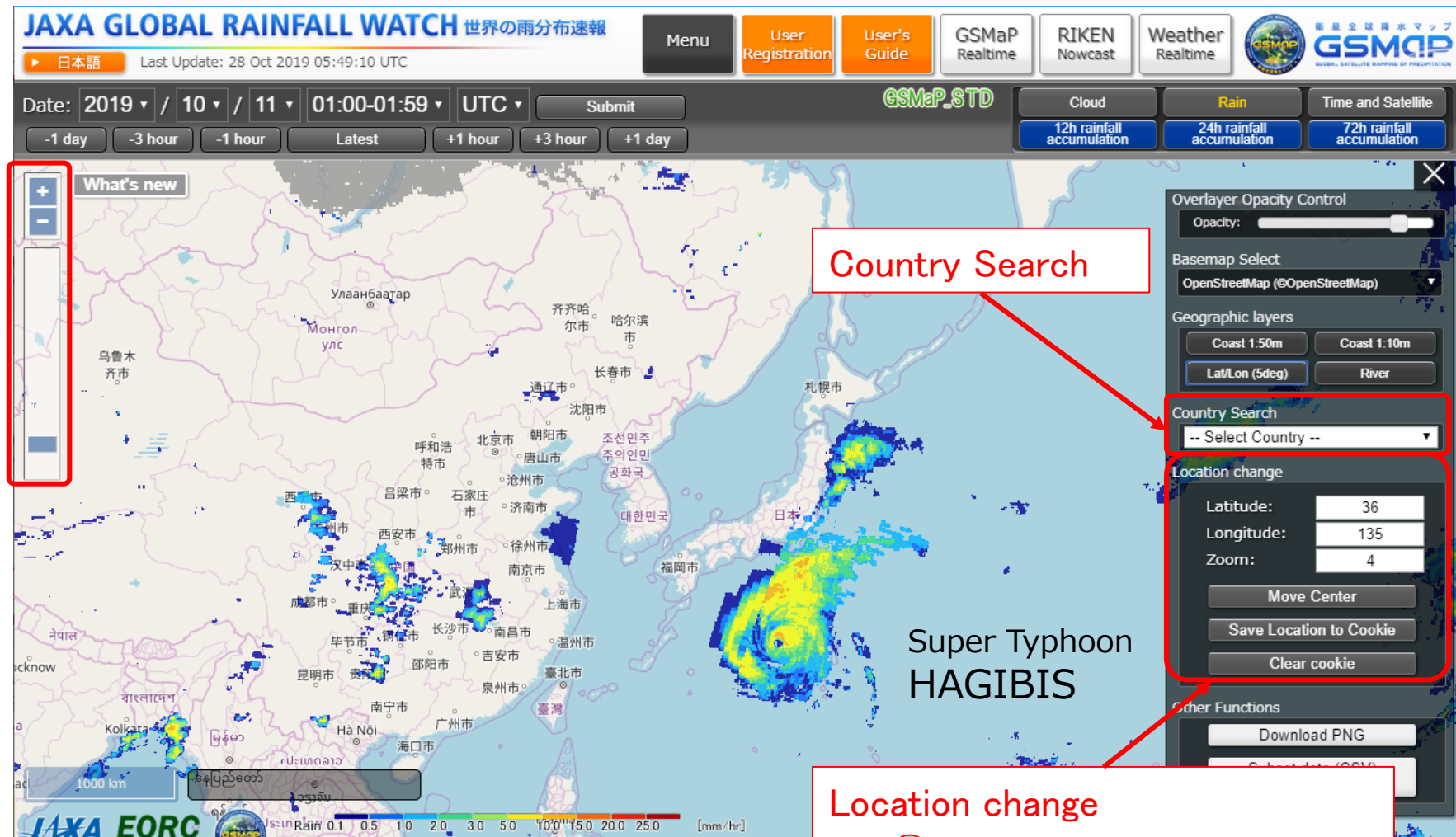


select date



# GSMaP website [png]

<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>



Zoom where you want to see!

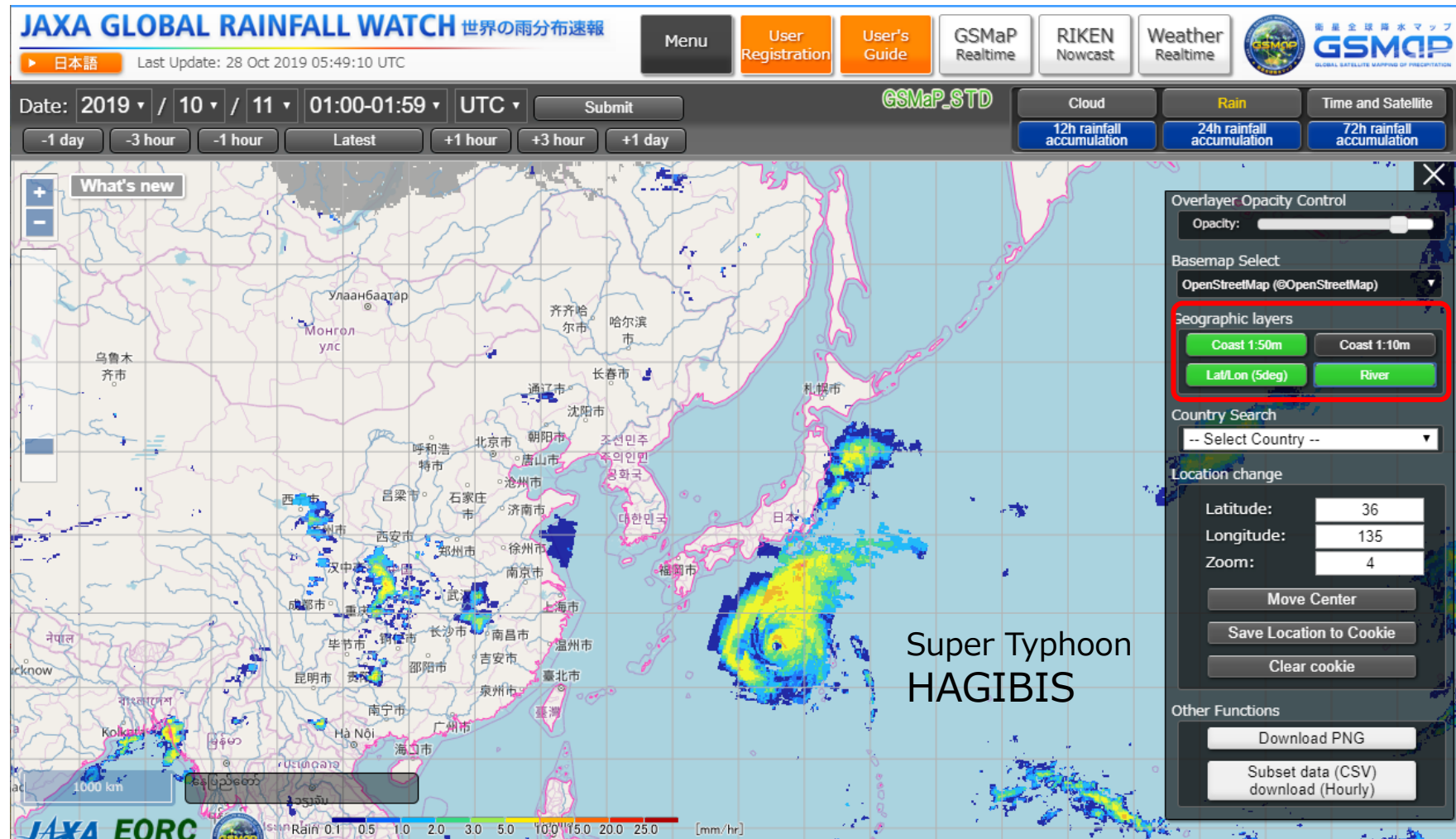
Location change

- ① Edit (Lat, Lon, Zoom level)
- ② click "Move Center"



# GSMaP website [png]

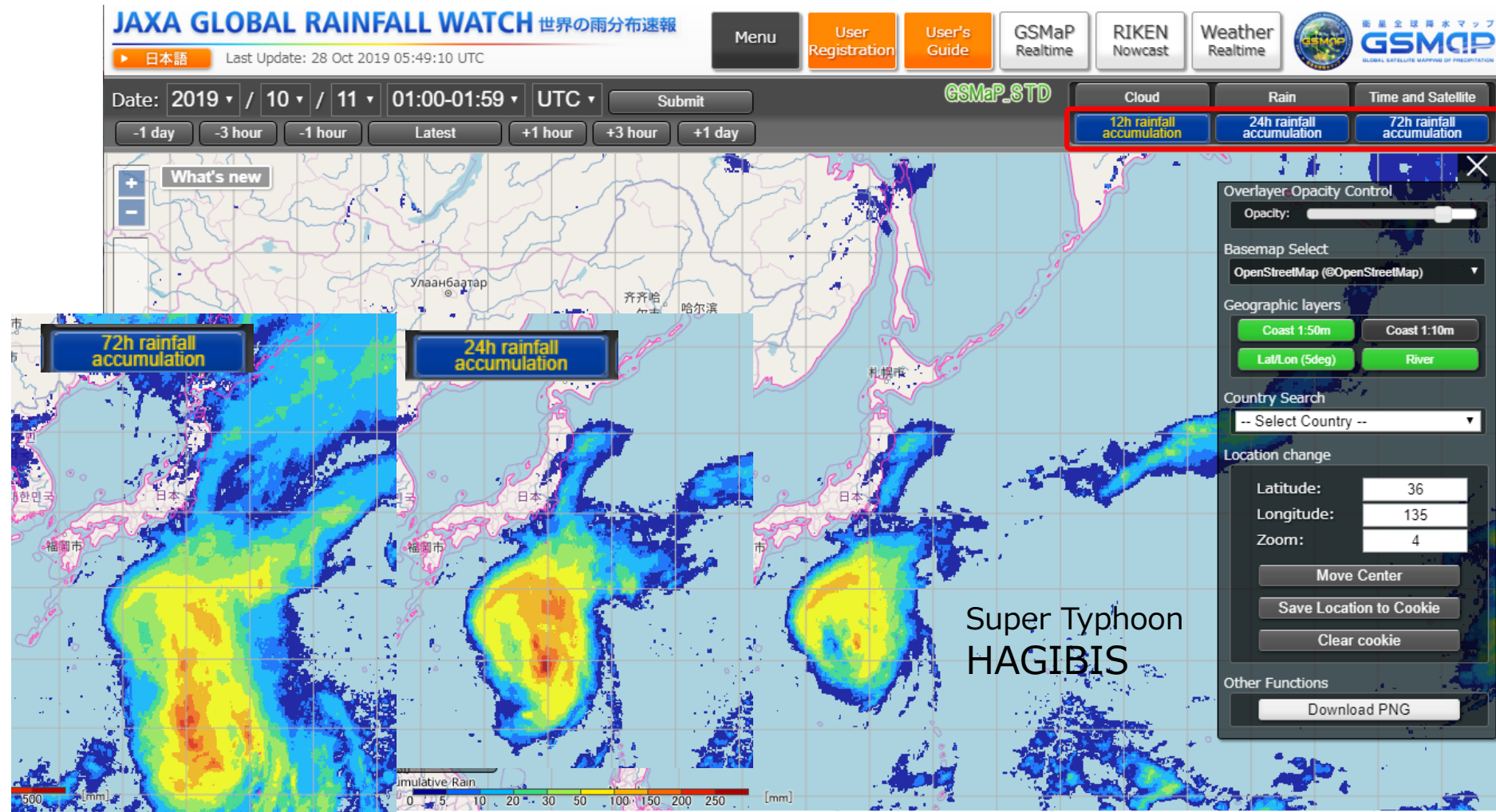
<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>



Overlap Geographic layers (coastline, lat/lon, river)

# GSMaP website [png]

<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>

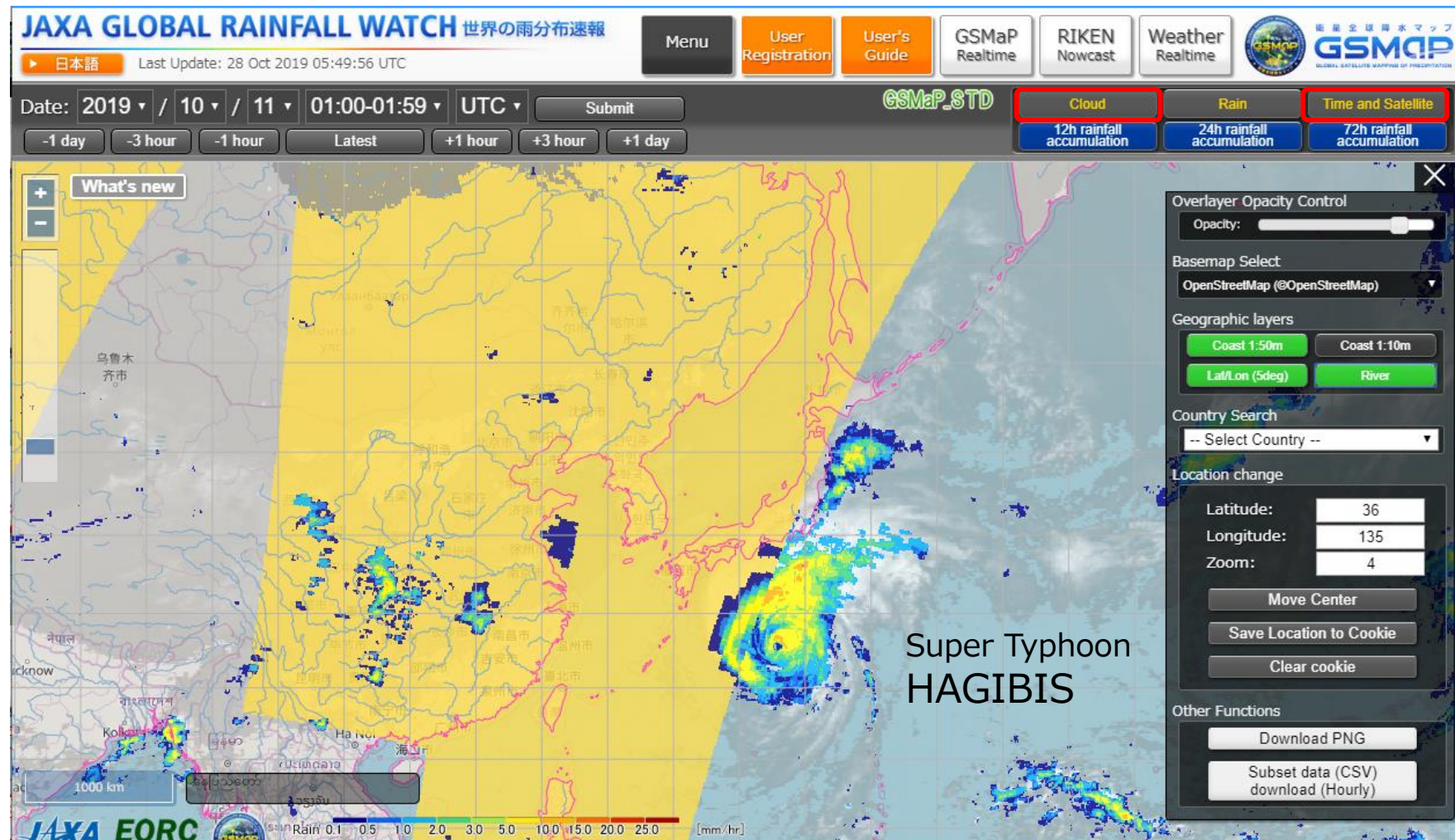


Check accumulated precipitation (12h/24h/72h)



# GSMaP website [png]

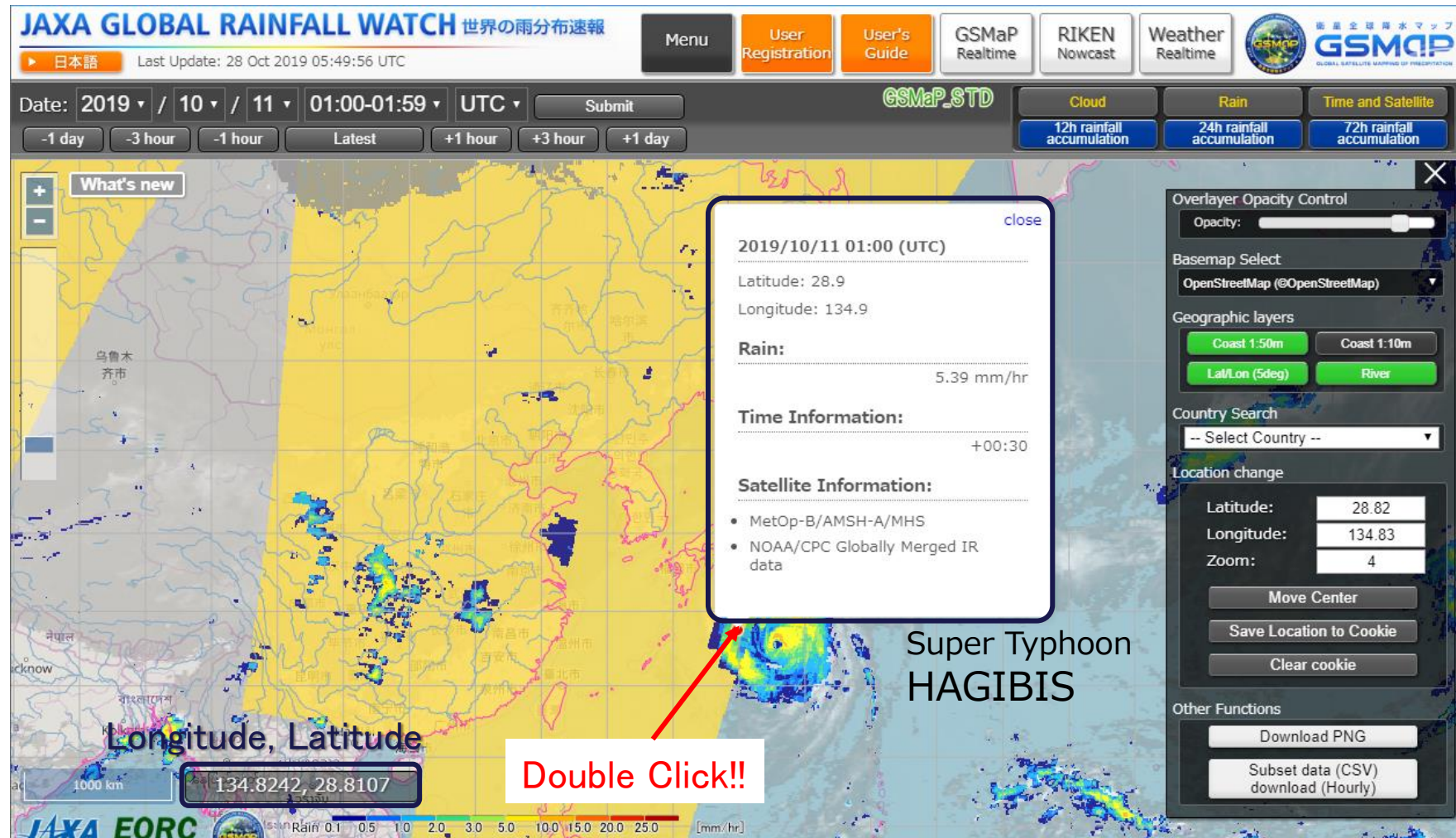
<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>



Overlay Cloud and/or Information flag

# GSMaP website [png]

<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>

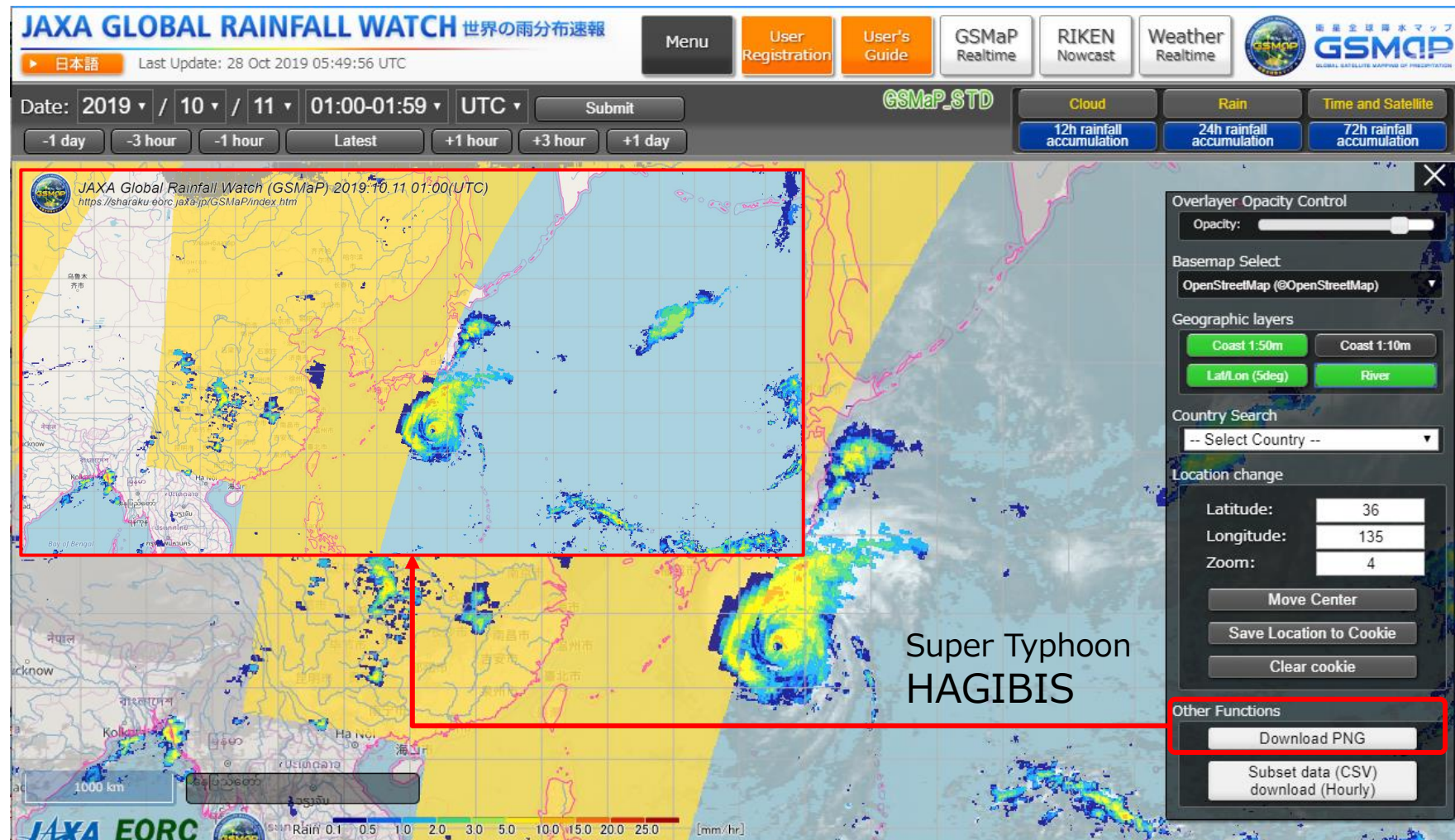


Display information of the point where you are interested



# GSMaP website [png]

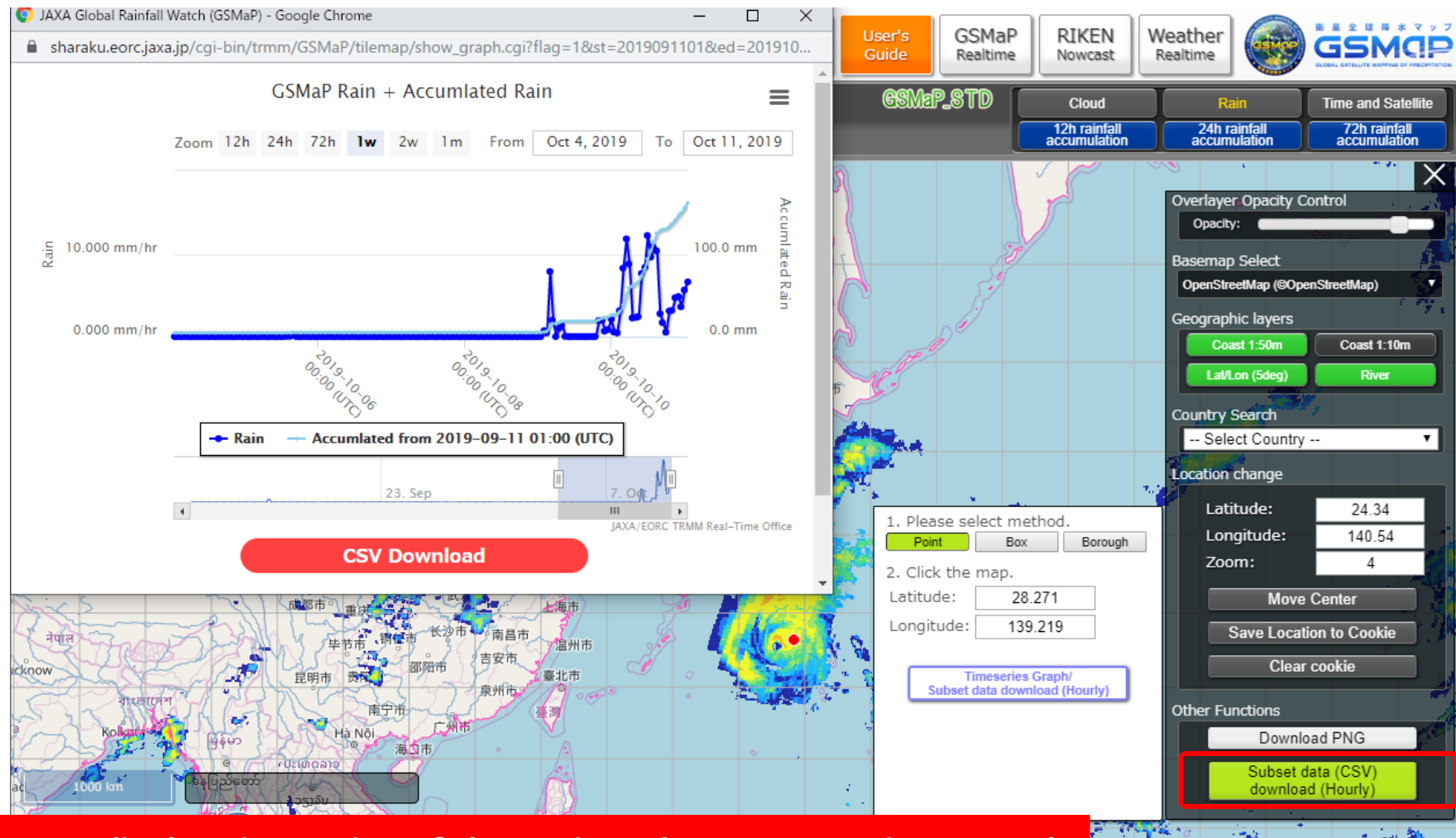
<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>



You can save image in png format!

# GSMaP website [png]

<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>



You can display timeseries of the region where you are interested.  
After user registration, you can download the CSV data.



# User Registration

<http://sharaku.eorc.jaxa.jp/GSMaP/index.htm>

**JAXA GLOBAL RAINFALL WATCH** 世界の雨分布速報

日本語 Last Update: 28 Oct 2019 05:49:56 UTC

Menu **User Registration** User's Guide GSMaP Realtime RIKEN Nowcast Weather Realtime

Date: 2019 / 10 / 11 01:00-01:59 UTC Submit

-1 day -3 hour -1 hour Latest +1 hour +3 hour +1 day

GSMaP\_STD Cloud Rain Time and Satellite

12h rainfall accumulation 24h rainfall accumulation 72h rainfall accumulation

What's new

Overlayer Opacity Control

Opacity: [Slider]

Basemap Select

OpenStreetMap (@OpenStreetMap)

Geographic layers

Coast 1:50m Coast 1:10m

Lat/Lon (5deg) River

Country Search

-- Select Country --

Location change

Latitude: 36

Longitude: 135

Zoom: 4

Move Center

Save Location to Cookie

Clear cookie

Other Functions

Download PNG

Subset data (CSV) download (Hourly)

JAXA EORC Rain 0.1 0.5 1.0 2.0 3.0 5.0 10.0 15.0 20.0 25.0 [mm/hr]



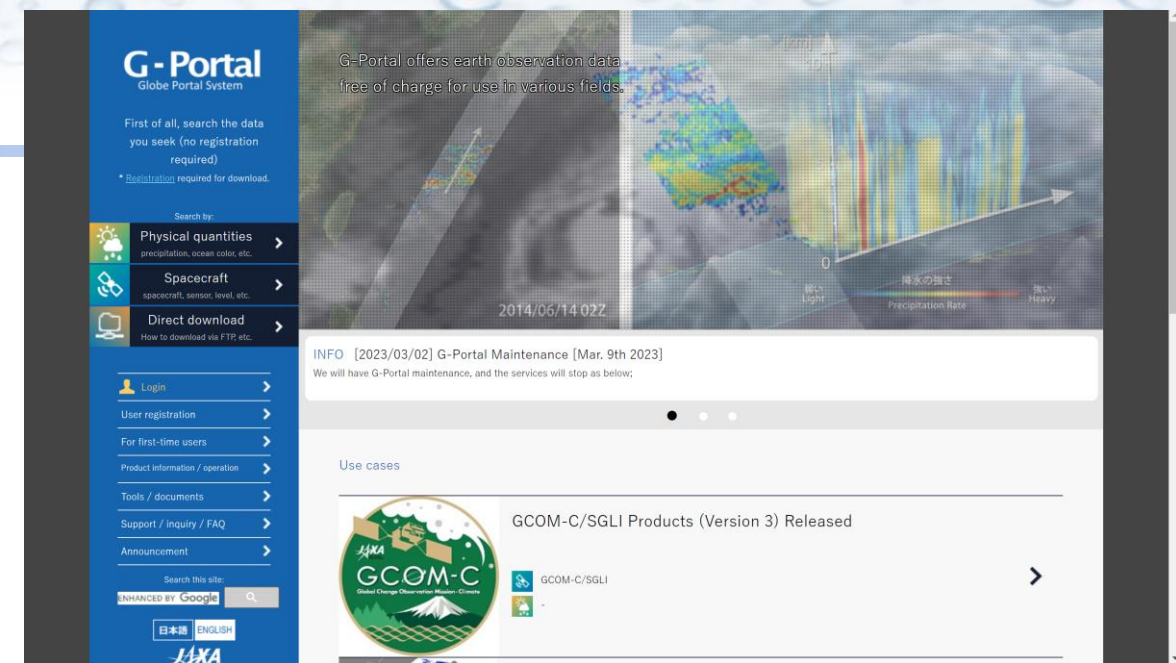
**GSMAP**  
GLOBAL SATELLITE MAPPING OF PRECIPITATION

# Data access and tools

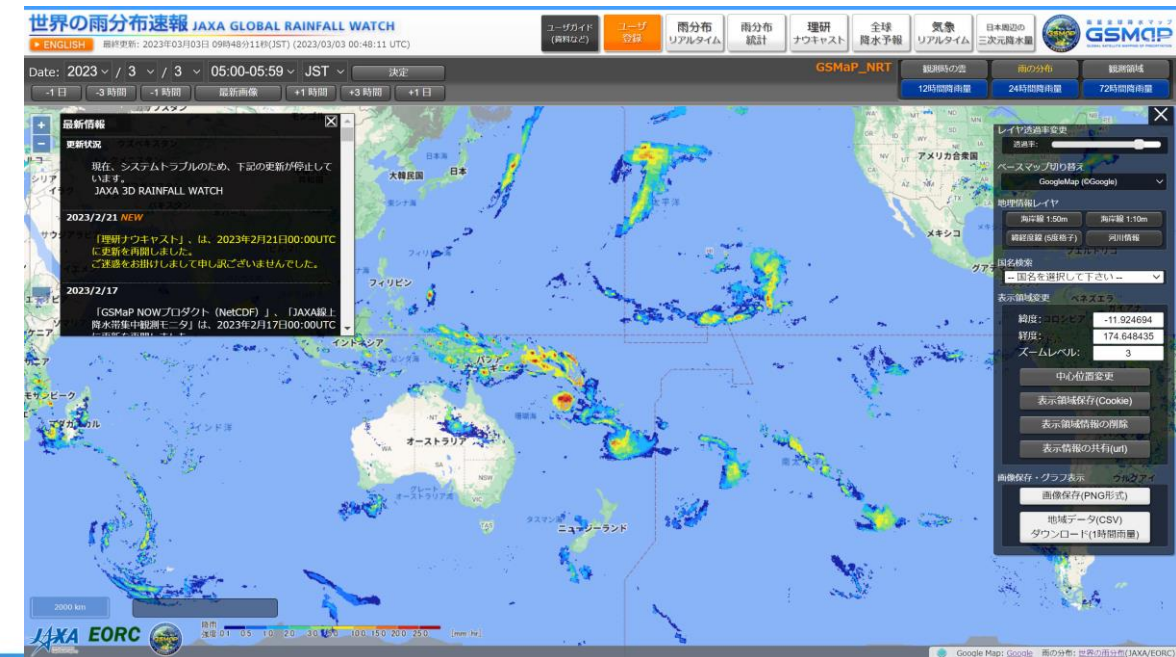


# Data distribution

- G-Portal: common data distribution portal of JAXA earth observation satellites  
<https://gportal.jaxa.jp/gpr/?lang=en>



- “JAXA Rainfall Watch” website/ftp site  
[https://sharaku.eorc.jaxa.jp/GSMaP/index\\_j.htm](https://sharaku.eorc.jaxa.jp/GSMaP/index_j.htm)



# Data distributions and formats

- The type and format of the product as shown in the table below.

In the new GSMaP version (v8), GSMaP NRT, Gauge\_NRT, NOW, and Gauge\_NOW in NetCDF format is newly available.

	NOW Gauge_NOW	NRT Gauge_NRT	MVK Gauge
G-Portal <a href="https://gportal.jaxa.jp/gpr/?lang=ja">https://gportal.jaxa.jp/gpr/?lang=ja</a>		HDF Global-scale, txt	HDF Global-scale, txt NetCDF GeoTIFF
“JAXA Rainfall Watch” website/ftpsite <a href="https://sharaku.eorc.jaxa.jp/GSMaP/index_j.htm">https://sharaku.eorc.jaxa.jp/GSMaP/index_j.htm</a>	Binary Region-subset,txt NetCDF	Binary Region-subset,txt NetCDF	Binary Region-subset,txt



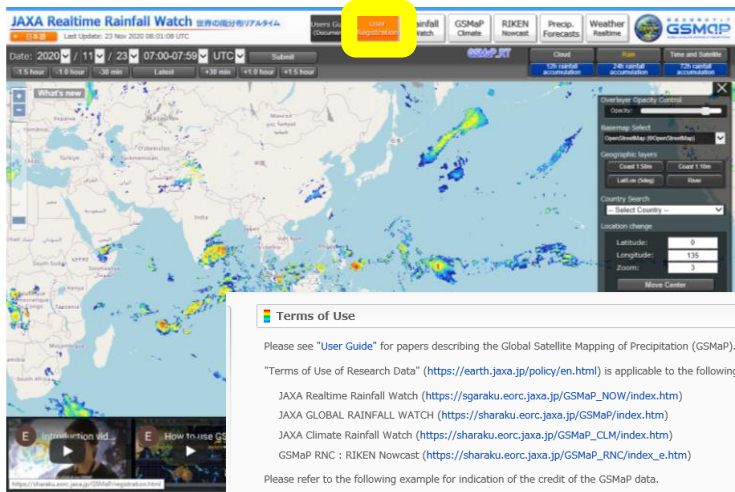
# GSMaP data distribution for analysis

Click here

User  
Registration

You can download the data after user registration (free of charge).

<https://sharaku.eorc.jaxa.jp/GSMaP/registration.html>



## Terms of Use

Please see "User Guide" for papers describing the Global Satellite Mapping of Precipitation (GSMaP).  
"Terms of Use of Research Data" (<https://earth.jaxa.jp/policy/en.html>) is applicable to the following services.  
JAXA Realtime Rainfall Watch ([https://sharaku.eorc.jaxa.jp/GSMaP\\_NOW/index.htm](https://sharaku.eorc.jaxa.jp/GSMaP_NOW/index.htm))  
JAXA GLOBAL RAINFALL WATCH (<https://sharaku.eorc.jaxa.jp/GSMaP/index.htm>)  
JAXA Climate Rainfall Watch ([https://sharaku.eorc.jaxa.jp/GSMaP\\_CLM/index.htm](https://sharaku.eorc.jaxa.jp/GSMaP_CLM/index.htm))  
GSMaP RNC : RIKEN Nowcast ([https://sharaku.eorc.jaxa.jp/GSMaP\\_RNC/index\\_e.htm](https://sharaku.eorc.jaxa.jp/GSMaP_RNC/index_e.htm))  
Please refer to the following example for indication of the credit of the GSMaP data.  
"GSMaP data by Japan Aerospace Exploration Agency (JAXA)."

### (1) Protection of Personal Information & Handling of Personal Information

JAXA handles the personal information such as names and e-mail addresses in accordance with the Code and other laws and regulations regarding personal information including GDPR and JAXA's rules on protection of personal information.  
For details, refer to "Consent form for handling personal information based on GDPR" and "JAXA Privacy Policy".

JAXA doesn't use registered personal information except for the following purposes:

- Statistic and analysis of data use
- Questionnaire surveys to users for improvement of the Service
- Response to inquiries from users

In addition, JAXA employs other companies to perform functions on our behalf. The functions include the system management, user management, and Help Desk operation.  
They may access to personal information to perform the functions, but may not use it for other purposes.

### (2) Management of account and password

User account and password are managed and used under the responsibility of user. JAXA is not responsible to you for any loss or damage or due to any other cause beyond the control of JAXA that may be caused by misuse of user account and password by another person.

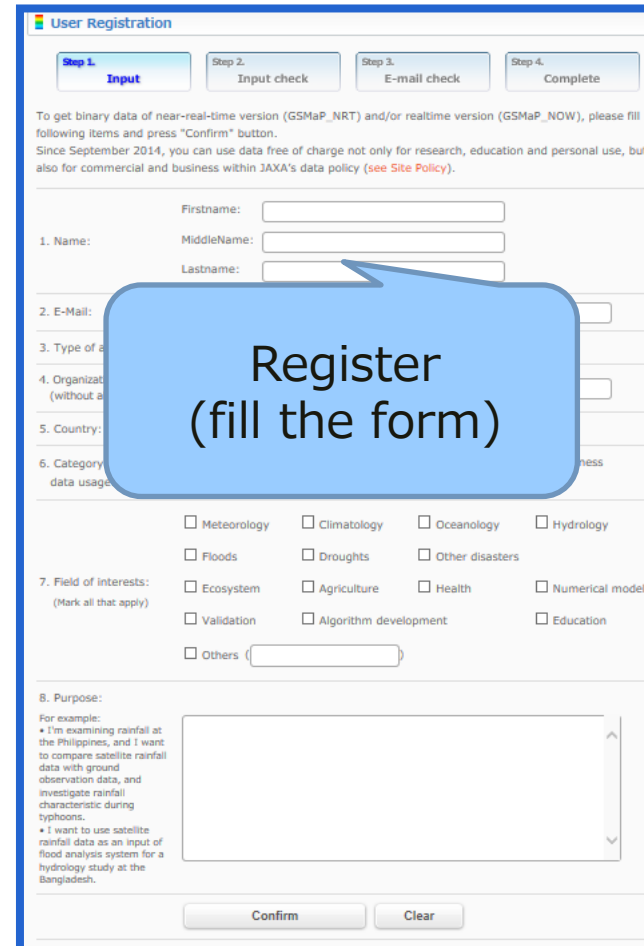
### (3) Ownership of Data etc.

The copyrights of the standard products and other materials provided in the Service are the property of JAXA.

## Terms of Service?

Agree (Next)

Disagree (Back)



User Registration

Step 1. Input   Step 2. Input check   Step 3. E-mail check   Step 4. Complete

To get binary data of near-real-time version (GSMaP\_NRT) and/or realtime version (GSMaP\_NOW), please fill following items and press "Confirm" button.  
Since September 2014, you can use data free of charge not only for research, education and personal use, but also for commercial and business within JAXA's data policy (see Site Policy).

1. Name:   Firstname:   MiddleName:   Lastname:   E-Mail:   2. E-Mail:   3. Type of   4. Organization (without   5. Country:   6. Category of data usage:   7. Field of interests: (Mark all that apply)   8. Purpose:

Confirm   Clear

Ftp server  
information will be  
sent via email

climate  
now  
realtime  
realtime\_ver  
riken\_nowcast  
standard

Data specifications are  
explained in the documents.

[https://sharaku.eorc.jaxa.jp/GSMaP/faq/GSMaP\\_faq18.html](https://sharaku.eorc.jaxa.jp/GSMaP/faq/GSMaP_faq18.html)



# Data distribution from JAXA GSMP ftp site



## Directories:

/now

... GSMP\_NOW (real-time version, 0-hr data latency, latest algorithm since December 2021)

For users who want to get realtime data!

/realtime

... GSMP\_NRT

(near-real-time version, 4-hr data latency, since March 2000)

... GSMP\_Gauge\_NRT

(near-real-time version with gauge-calibration, 4-hr data latency, since April 2000)

For users who want to get near-realtime data with 4-hour latency!

/standard/v6

... GSMP\_MVK (standard version Ver.6, 3-day data latency, since March 2014)

... GSMP\_Gauge (standard with gauge-calibration Ver.6, 3-day data latency, since March 2014)

... GSMP\_RNL (reanalysis version Ver.6, a period from March 2000 to February 2014)

... GSMP\_Gauge\_RNL (reanalysis with gauge-calibration Ver.6, a period from March 2000 to February 2014)

For users who want to use long-term GSMP dataset with higher accuracy

/standard/v8

... GSMP\_MVK (standard version Ver.8, 3-day data latency)

... GSMP\_Gauge (standard with gauge-calibration Ver.8, 3-day data latency)

For users who want to use GSMP dataset with higher accuracy (this is the latest algorithm but still under reprocessing)

/climate

... GSMP\_CLM (statistics based on near-real-time version with gauge-calibration Ver.6 since April 2000)

For users who want to get statistical dataset of GSMP



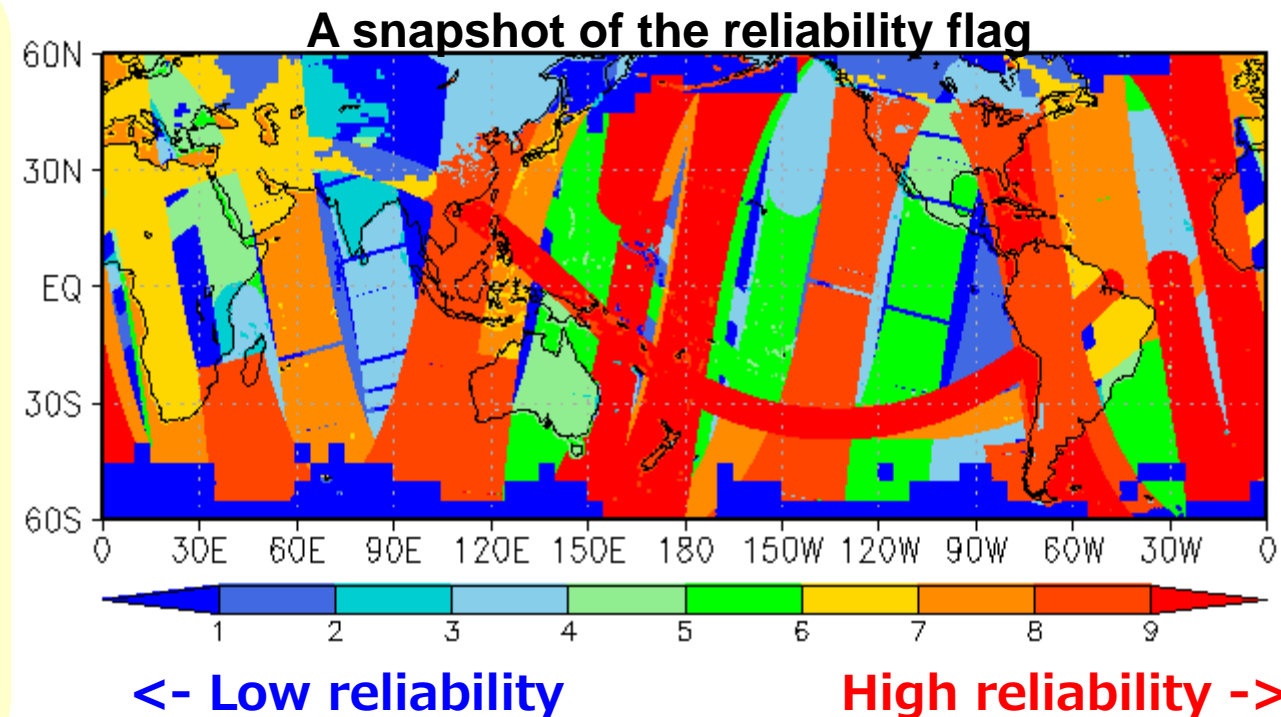
# Complementary data for GSMP



- **Characterizing reliability** of GSMP **simply** and **qualitatively**.
  - We provide some complementary information of GSMP to support users to use the GSMP data efficiently; Satellite Information Flag, Observation Time Flag, Reliability Flag

**Reliability flag: the reliability at each pixel is represented by ten levels by considering**

- Surface type reliability
- Low temperature reliability
- Moving vector and Kalman filter (MVK) propagation reliability





- Q1. [I want to know about the type and period of available GSMaP product.](#)
- Q2. [I want to know the specific area of the text data \(.csv\).](#)
- Q3. [I want to know about the detail \(parameter, data format, etc.\) of the product.](#)
- Q4. [I want to know the unit of daily rainfall. /I want to know how to get the daily rainfall data.](#)
- Q5. [What does "01:00Z" mean?](#)
- Q6. [I want to know about the difference between the products \(GSMaP NOW, GSMaP NRT, GSMaP MVK, GSMaP RNL, GSMaP Gauge NRT, GSMaP Gauge, GSMaP Gauge RNL\).](#)
- Q7. [I want to know what geodetic reference system used to GSMaP.](#)
- Q8. [I forgot my user ID, password, URL, so please re-issue it.](#)
- Q9. [I am using the correct user ID and password, but I can not access GSMaP.](#)
- Q10. [I want to know how to open the data with ArcGIS.](#)
- Q11. [I want to know how to open the data. /Can you recommend any software to view/visualize the data?](#)
- Q12. [I want to know how to read the data with GrADS, and how to use ".ctl" files.](#)
- Q13. [Is it possible to use JAXA Global Rainfall Image on my academic research report?](#)
- Q14. [Is it possible to use JAXA Global Rainfall Image for commercial use?](#)
- Q15. [I want to know the algorithm used for the GSMaP.](#)
- Q16. [I want to use GSMaP data on our web. What is the necessary procedure?](#)
- Q17. [What data is GSMaP RNC?](#)
- Q18. [Can I get Data Format Description?](#)
- Q19. [I want to download only specific area.](#)
- Q20. [I want to know the difference from the GSMaP data provided from G-Portal.](#)



# Opportunities: GPM Asia-Oceania Workshop

- The 8<sup>th</sup> GPM Asia-Oceania Workshop on Satellite Precipitation Data Utilization
  - **Planned to be held with Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) in Manila, Philippines, on 12-13 Mar. 2020.**
- Until 7<sup>th</sup> workshop, the name was “GPM Asia Workshop” and renamed to “GPM Asia-Oceania Workshop” and invited some Pacific Agencies such as BoM Australia, PNG met, Fiji met, and so on.
- Purpose of the workshop:
  - To promote satellite precipitation data utilization in Asia-Oceania, and move forward research activities related to GPM in each country in working-level.
  - To share early validation and utilization results of the GPM products in Asia-Oceania countries.
  - To proceed future collaborations between Japan and Asian-Oceania countries.

Postponed due to the COVID-19 pandemic



The 7<sup>th</sup> GPM Asia Workshop on Satellite Precipitation Data Utilization

Held in Badan Meteorologi, Klimatologi, dan Geofisika (BMKG), Jakarta, Indonesia, on 11-12 Jan. 2018



# Opportunities of training

## International Precipitation Working Group (IPWG) of the Coordination Group for Meteorological Satellites (CGMS)



- Training lectures are held during the IPWG meetings.
- **The next IPWG meeting is planned at Tokyo, Japan in 2024.**

## Plan to open the GSMaP lecture materials

- JAXA is planning to prepare the lecture video.
- Contents will be similar to today's GSMaP training session.
- Any feedbacks from you are welcome!





# Summary

- GSMP is the **multi-satellite product** by combining passive microwave radiometers, IR imagers, and precipitation radars.
- GSMP consists of some products, **realtime, near-realtime, standard and their gauge-adjusted versions**.
- Users can select the appropriate product according to their purposes, and the GSMP products are widely used for various fields.
- We distribute the data or image via website and ftpsite and users can freely access to the data.