Global Precipitation Measurement (GPM) Core Satellite DPR dataset

1. IDENTIFICATION INFORMATION

Name	Global Precipitation Measurement (GPM) Core Satellite DPR dataset
Metadata Identifier	GPM_DPR20230727092410-en

2. CONTACT

2.1 CONTACT on DATASET

Name	G-Portal Support Desk
Organization	Japan Aerospace Exploration Agency
Address	2-1-1 Sengen, Tsukuba, Ibaraki, 305-8505, Japan
E-mail	z-gportal-support@jaxa.jp

2.2 CONTACT on PROJECT

3. DOCUMENT AUTHOR

Name	Satoko Miura
Organization	JAXA/Satellite Applications and Operations Center (SAOC)

4. DATASET CREATOR

Name	JAXA

5. DATE OF THIS DOCUMENT

2023-07-27

6. DATE OF DATASET

creation : 2016-04-11

7. DATASET OVERVIEW

7.1 Abstract

The Dual-frequency Precipitation Radar (DPR) on board the GPM core satellite is composed of two radars: a Ku-band (13.6-GHz) Precipitation Radar (KuPR) and a Ka-band (35.5-GHz) Precipitation Radar (KaPR).

The KaPR instrument aims at sensitive observation, and can detect weak rainfall and snowfall that cannot be measured by KuPR. Since the KuPR instrument can detect heavier rainfall, simultaneous observation by the KaPR and KuPR will enable accurate measurement of precipitation from heavy rainfall in tropics to weak snowfall in high-latitudes.

Rain echo is affected by precipitation attenuation, and its amount depends on radar frequency and raindrop size. By matching position of radar beams and timing of transmitted pulses for KuPR and KaPR, and by measuring precipitation particles at the same place simultaneously by dual-frequency, size of precipitation particles (raindrop size distribution) can be estimated by differences in precipitation attenuation.

This will improve the accuracy of precipitation estimation since the information could not be obtained by single-frequency radar, such as the TRMM's PR. It is also expected to identify rainfall and snowfall by using differences in precipitation attenuation for dual-frequency.

7.2 Topic Category(ISO19139)

climatologyMeteorologyAtmosphere

7.3 Temporal Extent

Begin Date	2014-03-08
End Date	Under Continuation

7.4 Geographic Bounding Box

North bound latitude	65
West bound longitude	-180
Eastbound longitude	180
South bound latitude	-65

7.5 Grid

7.6 Geographic Description

7.7 Keywords

7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	Atmosphere > Precipitation > Precipitation Amount, Atmosphere > Precipitation > Rain	GCMD_science

7.7.2 Keywords on Project

7.8 Online Resource

JAXA Globe Portal (G-Portal) : https://www.gportal.jaxa.jp/gp/top.html

7.9 Data Environmental Information

7.10 Distribution Information

name	version	specification

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;

[Level2]

Reflectivities, 3D Precipitation

Spectral latent heating

[Level3]

Precipitation (daily)

Precipitation (monthly)

Spectral latent heating (Orbit)

Spectral latent heating (monthly)

8.1.2 Data Source

Data Source Citation Name	Description of derived parameters and processing techniques used

9. DATA REMARKS

10. DATA POLICY

10.1 Data Policy by the Data Provider

Please refer to "https://www.gportal.jaxa.jp/gp/gportal-agreement.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