



January 30, 2019

Release Notes for the PR Level 1 products

All users of PR Level 1 data should keep in mind the following changes in Version 5 products.

<Major changes in the PR Level 1 products from TRMM Version7 to GPM Version 5>

1. Changes of the PR's calibration parameters.

JAXA reexamined the PR's calibration parameters in the GPM Version 5 products based on a new knowledge obtained by GPM/DPR's calibration. With the new parameters, the measured radar reflectivity factors increase by about +1.1 dB from the corresponding TRMM Version 7 products, and PR's normalized surface cross section (σ_0) statistics agrees with KuPR's σ_0 .

2. Improvements of beam-mismatch correction.

The boost of the TRMM satellite orbit from 350 km to 402.5 km in August 2001 caused a mismatch of the transmitted and received antenna beam directions (called as "beam-mismatch") by one pulse due to PR's fixed hardware design. Although the beam-mismatch has been partially corrected in TRMM Version7 products by using the method described in Takahashi and Iguchi (2004), a systematic bias has remained near the surface and bright band. JAXA applied a new correction method in GPM Version5 products to mitigate the correction error (Kanemaru et al., in preparation).

3. Improvements of geolocation.

Since the satellite attitude and orbit information was reexamined by NASA/PPS, the geolocation of PR's IFOV (Instantaneous Field of View) was improved.

4. Data format was changed to the same format as GPM/KuPR's format.

PR's Level 1 product format in GPM Version 5 was changed to the same format as KuPR's Level 1 product in GPM Version 5. Users can refer to the following web site.

http://www.eorc.jaxa.jp/TRMM/documents/PR_algorithm_product_information/top_e.html



January 30, 2019

< Caveats for the PR Level 1 products >

1. Recently we found a program bug that is related to "FractionalGranuleNumber" in the "scanStatus" group. "FractionalGranuleNumber" shows a wrong value in the granules that cross a month boundary.