January 30, 2019

Release Notes for the PR Version 8/GPM PR Version 06A

Level 2 and Level 3 products

＜Major changes in the PR Level2 and Level3 products from Version 7 to Version 8＞

1. The format of version 8 products has been changed as described in “Precipitation Processing System (PPS), Primer for Tropical Rainfall Measuring Mission (TRMM), Satellite Products in the Global Precipitation Measurement (GPM) Era, Moving from HDF4 to HDF5 Level 2 and Level 3 Products, Version 1.0” (NASA, 2018).
2. A new calibration factor and radar parameters are applied to the data processing. Radar reflectivity factors and surface cross sections from the new PR products are now consistent with those from the DPR Ku products.
3. An improved algorithm is applied to correct for the beam-mismatch effect after the orbit boost of the TRMM satellite. New products have smaller contamination from surface echoes and show a better symmetric pattern of received echo statistics between the left and right swaths.
4. PR data are processed by essentially the same algorithm that is used to process the DPR/KuPR data. There are a few improvements associated with the DPR V06 algorithm. They include the new classification algorithm and improved angle-bin dependence of rain classification.

Caveat

1. PR’s rain estimates over land have significantly (about 15%) decreased in V8 from V7 because of the introduction of new calibration and the use of a location-dependent offset for the default DSD model in the DPR/KuPR algorithm. New PR estimates of rainfall rate over land are about 20% smaller than the corresponding estimates by the TMI. Note, however, that PR estimates over ocean have increased slightly.

2. 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.