



GPM Mission Gridded Text Products Providing Surface Precipitation Retrievals

Erich Franz Stocker (1), Owen Kelley (2), George Huffman (1), and Christian Kummerow (3)

(1) NASA/GSFC, Code 610., Greenbelt, United States (erich.f.stocker@nasa.gov, 301 614 5269), (2) George Mason University, Fairfax Va/NASA-GSFC code 610.2, (3) Colorado State University, School of Atmospheric Science, Ft. Collins, Co.

In February 2015, the Global Precipitation Measurement (GPM) mission core satellite will complete its first year in space. The core satellite carries a conically scanning microwave imager called the GPM Microwave Imager (GMI), which also has 166 GHz and 183 GHz frequency channels. The GPM core satellite also carries a dual frequency radar (DPR) which operates at Ku frequency, similar to the Tropical Rainfall Measuring Mission (TRMM) Precipitation Radar), and a new Ka frequency. The precipitation processing system (PPS) is producing swath-based instantaneous precipitation retrievals from GMI, both radars including a dual-frequency product, and a combined GMI/DPR precipitation retrieval. These level 2 products are written in the HDF5 format and have many additional parameters beyond surface precipitation that are organized into appropriate groups. While these retrieval algorithms were developed prior to launch and are not optimal, these algorithms are producing very creditable retrievals. It is appropriate for a wide group of users to have access to the GPM retrievals. However, for researchers requiring only surface precipitation, these L2 swath products can appear to be very intimidating and they certainly do contain many more variables than the average researcher needs. Some researchers desire only surface retrievals stored in a simple easily accessible format. In response, PPS has begun to produce gridded text based products that contain just the most widely used variables for each instrument (surface rainfall rate, fraction liquid, fraction convective) in a single line for each grid box that contains one or more observations.

This paper will describe the gridded data products that are being produced and provide an overview of their content. Currently two types of gridded products are being produced: (1) surface precipitation retrievals from the core satellite instruments – GMI, DPR, and combined GMI/DPR (2) surface precipitation retrievals for the partner constellation satellites. Both of these gridded products are generated for a .25 degree x .25 degree hourly grid, which are packaged into daily ASCII files that can be downloaded from the PPS FTP site. To reduce the download size, the files are compressed using the gzip utility.

This paper will focus on presenting high-level details about the gridded text product being generated from the instruments on the GPM core satellite. But summary information will also be presented about the partner radiometer gridded product. All retrievals for the partner radiometer are done using the GPROF2014 algorithm using as input the PPS generated inter-calibrated 1C product for the radiometer.