



Changes in the TRMM version 7 space/time averaged level 3 data products based on GPROF TMI swath-based precipitation retrievals

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TRMM has three level 3 (space/time averaged) data products that aggregate level 2 TRMM Microwave Imager (TMI) GPROF precipitation retrievals: 3A12, a monthly accumulation of 2A12 the GPROF swath retrieval product; 3B31, a monthly accumulation of 2B31 the combined retrieval product that uses both Precipitation Radar (PR) and TMI data; 3G68 (and its variants) that provide hourly retrievals for TMI, PR and combined. The 3G products are packaged as daily files but provide hourly information at .5 x .5 degree globally, .25 x .25 degree globally, and .1 x .1 degree over Africa, Australia and South America.

This paper will present detailed information of the changes in the v7 TMI GPROF level 2 retrievals that have led to changes in the level 3 accumulations. These changes have led to the need to “filter” precipitation retrievals over the ocean in the level three products. The Precipitation Processing System (PPS) has developed a common filtering approach that is used in the aggregations of all the level 3 products listed in the previous paragraph. The rationale and the effects of the filtering as also presented.

Additionally, the paper includes the changes that were made in the combined monthly product—3B31. This product has been substantially changed for version 7. One of the major changes was the change to a finer space resolution than was used in previous versions. Additionally, the product is now a more direct accumulation of the level 2 2B31 combined swath precipitation retrieval.

The paper concludes with a report of the status of the TMI based level 3 products for TRMM v7 reprocessing.