GSMaP Data Format Description

This document describes data format of GSMaP Standard (post-processing, 1998-2006) version products, which was developed based on activities of the GSMaP (Global Satellite Mapping of Precipitation) project. The GSMaP project was sponsored by Core Research for Evolutional Science and Technology (CREST) of the Japan Science and Technology Agency (JST) during 2002-2007. Since 2007, GSMaP project activities are promoted by the JAXA Precipitation Measuring Mission (PMM) Science Team.

Please see the following website for the GSMaP Standard (post-processing, 1998-2006) version products; http://sharaku.eorc.jaxa.jp/GSMaP_crest/

Data Format

- All binary files are produced in little-endian byte order platform, and archived with compressed using “gzip”.
- Missing values are -999.9 (no observation) and -1.0 (observed, but missing due to low temperature, sea ice and etc.).
- Units of the all dataset are mm/hr.
- Time definition
  - A hourly data means averages from XX:00Z to XX:59Z of the specified day, and its file name is entitled as ‘XX’.
  - A daily data means averages from 00:00Z to 23:59Z of the specified day.
  - A monthly data means averages from 1st 00:00Z to the end day 23:59Z of the specified month.
- We have two kinds of horizontal resolutions.

○ 0.1 x 0.1 lat/lon degree grid
  Products: GSMaP_MVK+, GSMaP_MVK
  Grid of those files consists of 3600 x 1200 pixels, which are longitude-latitude elements corresponding to a 0.1 x 0.1 degree grid that covers the global region from 60N to 60S. The center longitude and latitude of the first pixel [1,1] (left top corner) is [0.05E, 59.95N] (Figure 1).

○ 0.25 x 0.25 lat/lon degree grid
  Products: the others
  Grid of those files consists of 1440 x 480 pixels, which are longitude-latitude elements corresponding to a 0.25 x 0.25 degree grid that covers the global region from 60N to 60S. The center longitude and latitude of the first pixel [1,1] (left top corner) is [0.125E, 59.875N] (Figure 2).
Algorithm inputs

1) Geostationary satellite data
   Globally-merged pixel-resolution data of MTSAT, METSOSAT-7/-8, GOES-11/-12 provided by
   NOAA/CPC. The range of the latitude is 60N-60S. The temporal resolution is 1 hour in this
   product.

2) Low Earth Orbit satellite data

<table>
<thead>
<tr>
<th>Satellite</th>
<th>Height (km)</th>
<th>MWR</th>
<th>frequency (GHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRMM</td>
<td>402</td>
<td>TMI</td>
<td>10,19,21,37,85</td>
</tr>
</tbody>
</table>
3) Ancillary Data
- JMA Global Analysis (GANAL)
- JMA Merged satellite and in situ data Global Daily Sea Surface Temperatures (MGDSST)

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- We would appreciate receiving a preprint and/or reprint of publications in which you utilize our data. Relevant publications should be sent to:
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  Earth Observation Research Center, Japan Aerospace Exploration Agency
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- Please contact us at the TRMM Realtime office (tmrn_real@jaxa.jp) if you have any questions.

References
Papers describing the GSMaP project and algorithm are as follows.


**Contact**

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