Global Precipitation Measurement (GPM) Mission

NASA Precipitation Processing System (PPS)

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• Overview of data products
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Purpose of PPS

• The Precipitation Processing System (PPS) is a measurement based data processing and information system
  – NASA’s contribution to the GPM mission
  – Processes data from NASA precipitation instruments
  – Inter-calibrates partner radiometer brightness temperatures to the GPM core
  – Data system interface to the NASA Mission Operations center

• Interface to GPM partner data centers providing partners with access to all GPM data

• Interface to GPM data users (science and applications) to GPM data

• Provide a near-real-time GPM Microwave Imager (GMI) data both brightness temperatures and rain retrieval included merged 3 hr global rain products
Overview of GPM Data Products

• These are currently being discussed and are not final

• Two classes of products
  – Near-real-time
    • GMI within 1 hour of collection of data
    • GPM Core PR data (upon receipt from JAXA)
    • Merged radiometer 3-hr products where oldest bit in product no more than 6 hours old (completeness depends to a large extent upon provision of partner data)
  – Research Quality—within 48 hours of receiving all required inputs
    • Level 1 --- GMI radiometer brightness temperatures and PR powers
    • Level 1C—Intercalibrated partner radiometer Tb; PR reflectivities
    • Level 2 – GMI, PR rain retrievals in IFOV; merged radiometer products
    • Level 3 – Merged 3 hour global rain products; individual instrument time and space averaged rain products; GIS formatted rain retrievals (currently seen mostly a rain accumulations)
    • Level 4 – merger of remote sensed and model data
PPS/GPM Ops Concept
Key GPM Data Exchange Principles

• To be useful GPM data must be quickly and freely be exchanged among GPM partners

• GPM partners must be free to distribute all GPM data including inter-calibrated brightness temperature data to all other partners without restrictions

• GPM should make its data products available to applications users and scientists
  – as quickly as transmission latencies allow
  – without restrictions or major limitations
  – without periods of proprietary embargoes (like TRMM)
  – from the closest server that provides the best and fastest access for the user.

• GPM shall provide sufficient information about data products so that users understand their science basis.
PPS Summary

• NASA is contributing the precipitation measurement data system PPS to support the GPM mission
• PPS will distribute all GPM data products including NASA’s GMI data products freely and quickly
• PPS is implementing no system mechanisms for restricting access to GPM data
• PPS is implementing no system mechanisms for charging for GPM data products
• PPS will provide a number of geographical and parameter subsetting features available to its users
• The first implementation of PPS (called PPS--) will assume processing of TRMM data effective 1 June 2008
• TRMM realtime data will be available via PPS– to all users requesting access (send request to Erich.F.Stocker@nasa.gov)