Global Precipitation Climatology Project (GPCP)

Chair: Robert Adler (Laboratory for Atmospheres, NASA Goddard Space Flight Center)
URL: http://cics.umd.edu/~yin/GPCP//main.html

GPCP Overall Goals

a) development and production of long-term, global precipitation analyses at monthly and finer time scales
b) routine characterization of the quality of the estimates
c) incorporation of new satellite data sets (e.g., TRMM, AMSR, AIRS, AMSU) into the analyses
d) improvement of algorithms and analysis techniques
e) generation of finer space and time resolution products
f) assessment and analysis of the GPCP data sets—alone or in combination with other components of the hydrological cycle

Current Status

Currently there are three GPCP global precipitation products:
Monthly, 2.5º merged analysis [1979-present]
Pentad, 2.5 º merged analysis [1979-present]
Daily, 1º merged analysis [Oct. 1996-present]

Current Status of Processing: Processing is running smoothly with research products coming out about three months after observation time.
Monthly-- Jan. 1979-May 2006
Pentad-- Jan. 1979- May 2006
Daily-- Oct. 1996-May 2006

Significant Accomplishments

a) Reached 27 years of record with the monthly and pentad products.
b) Continued routine collection of satellite data and production of analysis products in a timely manner.
c) Modification made to GPCP monthly, multi-satellite (intermediate) product in high latitudes based on results by Serreze. Does not affect final merged product.
d) Transition from TOVS-based estimates to AIRS-based estimates in high latitudes successfully completed. May 2005 is the first month with AIRS.
e) Assessment of GPCP monthly product completed in August 2006 (led by A. Gruber and V. Levizzani).
f) Discussions at WGDMA and elsewhere developing outline for GPCP Version 3 re-processing.
g) Development of procedures for a “quick-look” GPCP monthly product (a week or so after end of month) underway.
h) GPCP is mentioned in the title or abstract of 58 journal articles, 28 from 2003 to the present. [GPCP data set often used in articles without mention in title or abstract]

Plans for 2007

a) Continue timely production of current GPCP products
b) Complete plan for Version 3 of GPCP products with 3-hr (or other fine scale) incorporating TRMM, AMSR, etc.--establish working group to plan/jointly develop product—reprocessing would start during/after 2007.
c) Work on extending daily (or 3-hr) product back before Oct. 1996 by using ISCCP B1 geo-IR data.
d) Carry assessment document to completion.
e) Help develop plans for a GEWEX Precipitation Crosscut (details need to be established).
f) Participate in GRP multi-product analyses of water cycle.

Issues from GPCP for SSG

a) Need closer working relations with CliC for joint evaluation of products in high latitudes.
b) GHP and CEOP should have specific contact points with GPCP.

c) Acceleration of GPM should be strongly supported, specifically to improve GPCP products and more generally to meet GEWEX and WCRP (COPES) goals.
d) GHP should be encouraged to support precipitation analysis techniques incorporating terrain information that are applicable globally. Such techniques would be very useful in the improvement of GPCP products.

GPCP Organization/People
GPCP Merge Center (Huffman—NASA Goddard)
GPCP Gauge Center [GPCC] (Schneider—Deutscher Wetterdienst)
GPCP Microwave-Land Center (Ferraro—NOAA/NESDIS)
GPCP Microwave-Ocean Center (Chiu—George Mason Univ.)
GPCP Geosynchronous Center (Janowiak—NOAA/NCEP)

The reference papers for the three GPCP products are:

Monthly
Adler, R. F., G. J. Huffman, A. Chang, R. Ferraro, P. Xie, J. Janowiak, B. Rudolf, U. Schneider, S. Curtis, D. Bolvin, A. Gruber, J. Susskind, and P. Arkin, 2003: The version 2 Global Precipitation Climatology Project (GPCP) monthly precipitation analysis (1979-present). *J. Hydrometeor*. 4, 1147-1167.

Pentad
Xie, P., J. E. Janowiak, P. A. Arkin, R. Adler, A. Gruber, R. Ferraro, G. G. Huffman, and S. Curtis, 2003: GPCP pentad precipitation analyses: an experimental data set based on gauge observations and satellite estimates. *J. Climate*, **16**, 2197-2214.

Daily
Huffman, G.J., R.F. Adler, M. Morrissey, D.T. Bolvin, S. Curtis, R. Joyce, B McGavock, J. Susskind, 2001: Global Precipitation at One-Degree Daily Resolution from Multi-Satellite Observations. *J. Hydrometeor.,* **2**(1), 36-50.