

SCOPE-CM Project: Liquid Water Path and Rain Water Path Climatologies in the GPM era

Year 1 Update

Ralf Bennartz^{1,2}, Tom Greenwald², Chris O'Dell³, Greg Elsasser³, Rainer Hollmann⁴, Martin Stengel⁴, Marc Schröder⁴

1: Earth & Environmental Sci., Vanderbilt University

2: SSEC, University of Wisconsin – Madison

3: CIRA, University of Colorado

4: German Weather Service, DWD

GPM was launched
successfully on:

Thu, 27 Feb 2014
18:38:33 UTC



Year 1 Status against time line

- Months 1-3: Collect model results for different weather systems and initialize modeling study (ongoing CSU)
 - Status: **Completed data overview. Data collection delayed b/c of data availability**
- Months 1-3: Collocate and assemble MODIS/AMSR/CloudSat data for subscale inhomogeneity study (ongoing, UW-Madison)
 - Status: **Nearly finished. Experienced significant delays b/c of delayed release of MODIS C6 and AMSR V7 Ocean Suite products.**
- Months 4-6: Run slant-path radiative transfer and instrument convolution to generate synthetic TBs (CSU/UW-Madison)
 - Status: **Complete modeling system set-up allowing for full orbit simulations of arbitrary satellites**
- Months 7-12: Perform initial study on rain/liquid separability using model results (CSU)
 - Status: **Delayed b/c of data delay**
- Months 7-12: Perform initial inhomogeneity study (UW-Madison)
 - Status: **Performed initial analysis based on simulation data.**
- Months 11-12: Initial publication based on model results (lead CSU)
 - Status: **Delayed b/c of data dela**

Year 2 and 3 revised schedule

Year 2

- Finish Year 1 tasks
- Validate and evaluate Level 2 retrieval for LWP/RWP
- Assess and document accuracy of various components of retrieval
- Generate first version of new Level-3 climatology including estimates of systematic and random errors
- Publication of Level 2 methodology and validation results.

Year 3

- Extension of retrieval to additional sensors (e.g. GPM).
- Further refinement of Level 2 and Level 3 algorithms and products
- Enhanced error analysis using newly-available GMI & DPR observations
- Make Level 3 climatology available to broader scientific community
- Final publication on Level 3 results.