

The GPM GPROF V6 Database

Presenter: Christian Kummerow

Address: Mail Stop 1371, Fort Collins, CO 80523

Country: USA

Email: Kummerow@atmos.colostate.edu

Authors: Christian Kummerow, P. Brown

Affiliations: Colorado State University;

Preference: Oral presentation

The GPM Radiometer algorithm implemented in April of 2016 for the imaging radiometers and subsequently for the sounding radiometers (GPROF V05) used both the Combined Algorithm's inner swath and the Dual Precipitation Radar's Ku algorithm to construct a-priori databases. Version 6 of GPM products focused on extending the dual frequency radar to the entire swath and was not implemented for the radiometers. Version 7 of the radiometer algorithm changed the approach to now use strictly the Combined Algorithm's output over both land and ocean, while NOAA's MIRS product is used to construct atmospheric profile where no echo is detected by the GPM radars and no rain is detected by the CMB algorithm. While this simplifies the database construction, neither the raining, nor non-raining atmospheres completely predict the observed Tb. This causes uncertainties in simulating brightness temperatures for the a-priori databases for each constellations members except for GMI where direct observations may be used instead. The plan to address these issues, as well as progress towards implementing improved versions of GPROF that replace the Bayesian inversion with Convolution Neural Network schemes will be discussed.