ARC Progress Report

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In science activities of the current year we have modified the intersatellite merging process for the UAH data in two ways. We first removed a sequential accumulation of mean annual cycle differences among the satellites beginning with the first AMSU (1998, NOAA-15) since the mean annual cycle of the MSUs was different than that of the AMSUs. Secondly, we have now included data from the AMSU on NOAA-18 beginning in June 2005.

In preparing for moving the production of the UAH datasets to a federally-operated institution we participated in the STAR microwave workshop in Silver Springs in March 2010 (at our own expense.) Discussions were held to discover why significant differences are apparent between UAH, RSS and STAR, particularly over regions where little corrections should have been applied to the satellite data (i.e. tropical oceans.) UAH and the new ERA-I indicated excellent agreement while RSS and STAR indicated much more warming while agreeing with each other, indicating the warming arose from "corrective" processes applied by RSS and STAR.

To get to the bottom of these differences, and move toward the goal of institutionalizing the algorithms for operational data production, each team is writing up the step-by-step process that our individual algorithms follow. This will hopefully accomplish two goals (1) discover where the differences in the products arises and (2) lay out the process by which an algorithm team may develop the infrastructure to run the algorithms. For example, UAH houses the algorithm team for the AMSR-E science team of which R. Spencer is the lead. This algorithm team receives the algorithms from around the world from the various P.I.s, certifies the code, implements the operational execution of the code using the raw AMSR-E data, monitors the products for problems, and maintains/updates the code as new versions of the algorithms are supplied by the P.I.s. Regarding the MSU products, we are in the earliest stage of this as we are defining what our codes do with specific input data streams (i.e. raw digital counts, orbit ephemeras files, etc.). From there, an algorithm team may start building the system to (a) access raw data files required, (b) perform initial processing common to all algorithms, and (c) certify and implement the various individual algorithms.