RELEASE NOTES OF GPM VERSION 05 GMI CALIBRATION

The PPS V05 GMI calibration updates include adjustments of spillover coefficients for all GMI channels (these have a major impact on T_b) and a number of other minor adjustment described below. The magnitudes of T_b changes can be seen in Figure 12.1. The T_bs are reduced around 1 K at T_b around 280 K for channels 1-5. These changes are dominated by antenna pattern correction (APC) revisions. T_b changes for other channels are minor. At the direction of the x-cal team the V05 calibration changes were carried out by PPS.

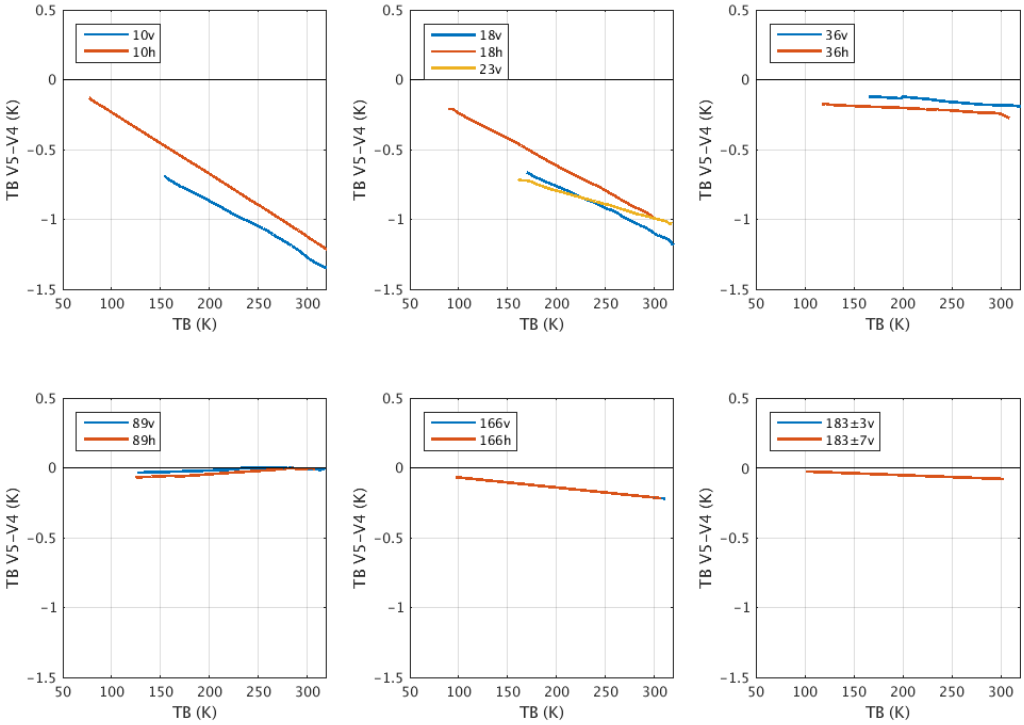

Figure 1. GMI T_b changes from V04 to V05.

1. Adjusted spillover coefficients of all GMI channels. This adjustment is the major improvement from V04 to V05 in GMI antenna pattern correction. The adjustment of spillover is based on the data from GMI deep space maneuver, inertial hold, and refinements of the analysis. T_b changes vary from channel to channel and are functions of brightness temperatures. For channels 1-5, the maximum change is around -1.0 K. for other channels, Tb changes are minor.

2. Adjusted cold load temperature for 10 GHz channels (from 2.74 K to 2.94 K) and 18 GHz channels (from 2.75 K to 2.85K). This is a minor adjustment and may result in T_b changes of less than 0.2 K for 10 GHz and 18 GHz channels.

3. Added a count (earth and cold) adjustment in the magnetism correction equation. This is a minor adjustment and may result in T_b changes of less than 0.2 K.

4. Adjusted magnetic correction coefficients. This is also a minor adjustment and may result in T_b changes of less than 0.2 K.

5. Added Earth-view antenna-induced along-scan corrections. The correction is < 0.1 K for most pixels along a scan but can be as large as 0.5 K near the edge of scans.

All of these corrections are implemented in V05 GMI L1B/Base and in ITE101. Details of all calibration approach and references can be found in the ATBD.