

JMA'S GSICS AND R/SSC-CM ACTIVITIES

In response to CGMS Recommendations 35.02 and 35.06

This paper reports on JMA's activities regarding GSICS and R/SSC-CM in response to Recommendations 35.02 and 35.06.

JMA established MTSAT-1R infrared intercalibration system on 2 July 2008 using AIRS and IASI data. Concurrently, JMA opened GSICS website, whose front page is <http://mscweb.kishou.go.jp/monitoring/calibration.htm>.

JMA has participated in the establishment of R/SSC-CM. JMA will precede initial activity about the Essential Climate Variables (ECV) satellite products of Atmospheric Motion Vectors (AMV) and Clear Sky Radiance (CSR) as one of the pilot projects in the framework of R/SSC-CM.

JMA'S GSICS AND R/SSC-CM ACTIVITIES

This paper reports on the activities of the Japan Meteorological Agency (JMA) regarding the Global Satellite Intercalibration System (GSICS) and the Regional/Specialized Satellite Centres for Climate Monitoring (R/SSC-CM) in response to Recommendations 35.02 and 35.06.

1 IMPLEMENTATION OF MTSAT-1R INFRARED INTERCALIBRATION SYSTEM ON GSICS

JMA started operational MTSAT-1R infrared intercalibration system on GSICS on 2 July 2008. JMA operationally implements the intercalibration of the MTSAT-1R's infrared channels by comparing data of the high spectral resolution sounders AIRS installed on the satellite AQUA and IASI installed on the satellite Metop-A. The comparison is based on the algorithm determined at the GSICS Research Working Group (GRWG) meeting held on February 2008. AIRS data used in the comparison is downloaded via the Internet from the NASA Goddard Earth Sciences (GES) Data and Information Services Center (DISC). IASI data used in comparison is downloaded via the Internet from the NOAA Comprehensive Large Array-data Stewardship System (CLASS).

JMA opened GSICS webpages on the Meteorological Satellite Center (MSC) website. The front page of the GSICS web site is <http://mscweb.kishou.go.jp/monitoring/calibration.htm>. The website provides the results of the MTSAT-1R intercalibration with AIRS and IASI. It also provides the results of intercalibration between MTSAT-1R and NOAA/AVHRR, which has been operated as reported at CGMS-34 JMA-WP-07. The website illustrates calculation procedure of the intercalibration and the results. Figure 1 shows the monthly scatter plots; the upper chart shows a radiance comparison, and the bottom chart shows brightness temperature residuals.

This GSICS intercalibration system is in its early phase. JMA plans to update the system with the future GRWG discussion in mind.

2 PREPARATION TOWARD MTSAT-1R VISIBLE INTERCALIBRATION

In research collaboration with the University of Tokyo's Center for Climate System Research (CCSR) and Chiba University's Center for Environmental Remote Sensing (CEReS), JMA has reprocessed the calibration of GMS-5 visible images from March 2000 to May 2003 on a trial basis. The calibration is examined using radiance comparison between observation and simulation over specific homogeneous target surfaces such as ocean, bare ground in Australia and smooth cloud top. For the simulation, the radiative transfer model RSTAR (System for Transfer of Atmospheric Radiation) developed by CCSR is used along with atmospheric fields analyzed by the Japanese 25-year Reanalysis Project (JRA-25) and MODIS retrieved properties. JMA has a plan to contribute to GSICS reporting the achievements and acquirements of this study.

3 CONTRIBUTION TO R/SSC-CM

JMA has participated in the establishment of R/SSC-CM. Based on the recommendations of R/SSC-CM planning meeting, JMA will proceed initial activity about the Essential Climate Variables (ECV) satellite products of Atmospheric Motion Vectors (AMV) and Clear Sky Radiance (CSR) as one of the pilot projects in the framework of R/SSC-CM.

In addition, JMA has a plan to derive a long-term surface albedo data set from the recalibrated visible data set of the Japanese geostationary satellites using a EUMETSAT algorithm as recommended at CGMS 33 (Recommendation 33.07).

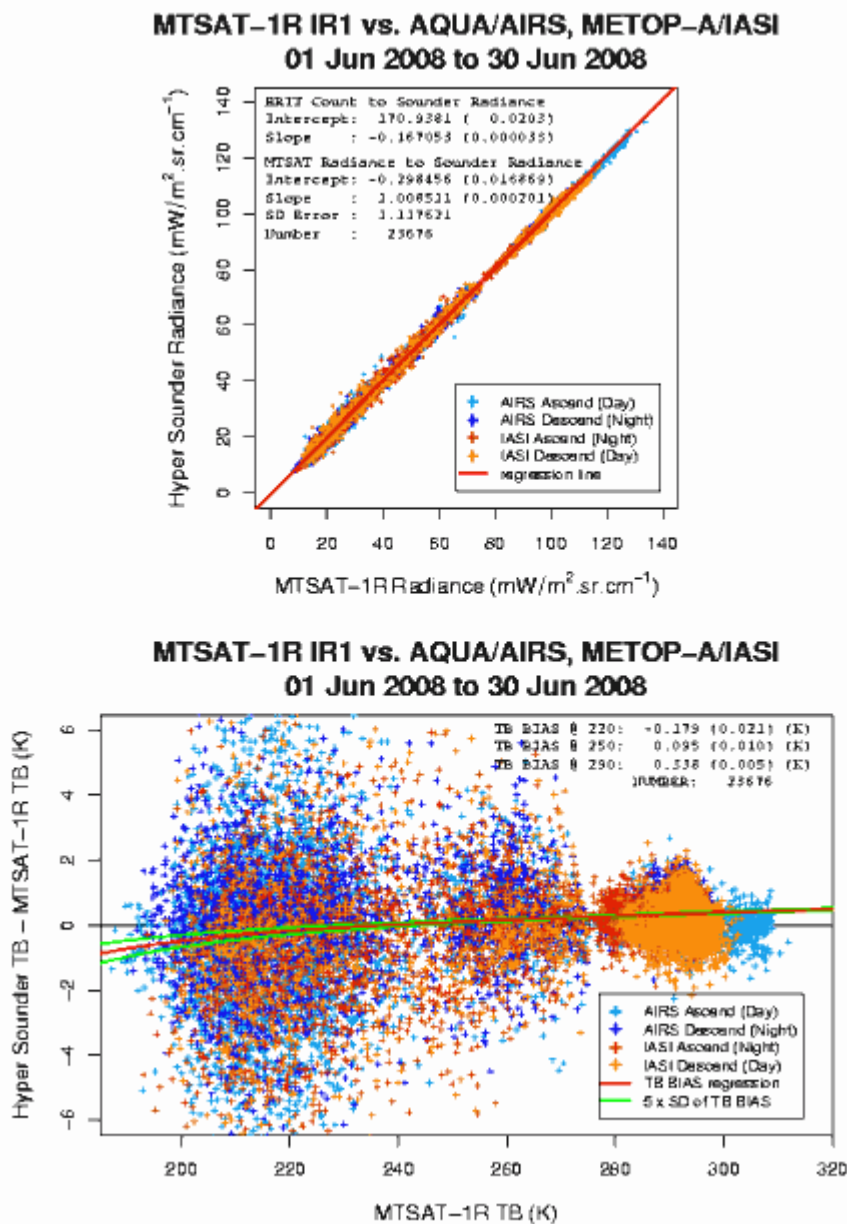


Figure 1: An example of MTSAT-1R intercalibration comparing with hyper spectral resolution sounders AIRS and IASI. MTSAT-1R infrared channel 1 (10.8 μm) is examined. The upper chart shows a radiance comparison, and the bottom chart shows brightness temperature residuals. The intercalibration period is one month from 1 June to 30 June 2008.