**CURRENT STATUS OF THE AMSR2 AND THE GCOM-W1 “SHIZUKU”**

**MISAKO KACHI AND KEIJI IMAOKA**

Earth Observation Research Center, Japan Aerospace Exploration Agency
with GCOM-W1 Project Team

**MAJOR EVENTS**

- **2012.5.18** GCOM-W1 (SHIZUKU) was launched
- **2012.6.29** Join A-Train orbit
- **2012.7.03** Start AMSR2 observation from A-Train orbit
- **2012.7.04** Release of AMSR2 observation images
- **2012.8.10** Initial functional verification completed
- **2012.8.31** Preliminary Level 1 delivery to PI and related agencies
- **2012.10** Preliminary Level 2 delivery to PI and related agencies
- **2013.1** Level 1 public release
- **2013.5** Level 2 public release

**IMPROVEMENT FROM AMSR-E**

1) Deployable main reflector system with 2.0m diameter (1.6m for AMSR-E)
2) Frequency channel set is identical to that of AMSR-E except 7.3GHz channels for helping RFI identification
3) Two-point external calibration with improved HTS (hot-load)
4) Add a redundant momentum wheel to increase reliability

**SPATIAL RESOLUTION**

AMSR2 6.9GHz H-pol AMSR-E 6.9GHz H-pol

Increase of antenna size (1.6 to 2.0 m) resulted in around 18% improvement in spatial resolution at 6.9 GHz channels.

**AMSR2 ALL CHANNELS**

| Channel | Center Frequency (GHz) | Beam Width [H|V] | Pol. | Beam Width [Ground resolution, km] | Sampling Interval [s] |
|---------|------------------------|-----------------|-----|-----------------------------------|----------------------|
| 6V      | 6.95                  | 150             | V   | 100                               | 10                   |
| 6H      | 6.95                  | 150             | V   | 100                               | 10                   |
| 7M      | 7.32                  | 120             | V   | 90                                | 7                    |
| 7H      | 7.32                  | 120             | H   | 120                               | 7                    |
| 10H     | 10.55                 | 200             | V   | 50                                | 10                   |
| 10V     | 10.55                 | 200             | V   | 50                                | 10                   |
| 18H     | 18.70                 | 330             | H   | 140                               | 10                   |
| 18V     | 18.70                 | 330             | V   | 140                               | 10                   |
| 37H     | 37.00                 | 700             | V   | 370                               | 10                   |
| 37V     | 37.00                 | 700             | V   | 370                               | 10                   |
| 89H     | 89.00                 | 1300            | V   | 890                               | 10                   |
| 89V     | 89.00                 | 1300            | V   | 890                               | 10                   |

**L1 CALIBRATION EARLY RESULTS**

Land TB of AMSR-E, WindSat, and SSM/I-F13 (MSFC)

Various inter-comparisons are in progress. Currently simple comparison of TB over densely forested areas in the Tropics without atmospheric correction.

**AMSR2 LEVEL 2 PRODUCTS**

Precipitation (7 Aug 2012)

Rainfall of Typhoon No.11 "HAIKUTU" at around 2:30 a.m. on August 7, 2012 (JST) with AMSR-E. AMSR2 data will be added to processing of JAXA’s GSMap NRT product later, and AMSR2 rainfall algorithm will be base algorithm of GSMap for GPM era.

**SWATH WIDTH**

AMSR2: 1,617.6km
AMSR-E: 1,457.6km

AMSR2 Level-1B and -L2 products retain all scan points from Level-1A product, resulting in the increase of swath width. Nominal swath width (instrument assured) is still 1,450km, but effective swath width is wider than 1,600km after scan-bias correction.

**C-BAND RFI STATUS**

RFI signals at 7.3 GHz channels are more evident and widespread than those at 6.9 GHz channels. Over land, they are evident over Southeast Asia, Eastern Europe, Russia, etc. Frequency of occurrences of RFI are higher over ocean too. Simple RFI identification will be tested by using this TB difference.