JAXA 2-rpm AMSR-E Processing Status

AMSR-E Data Processing Update, Results and Cross-Calibration

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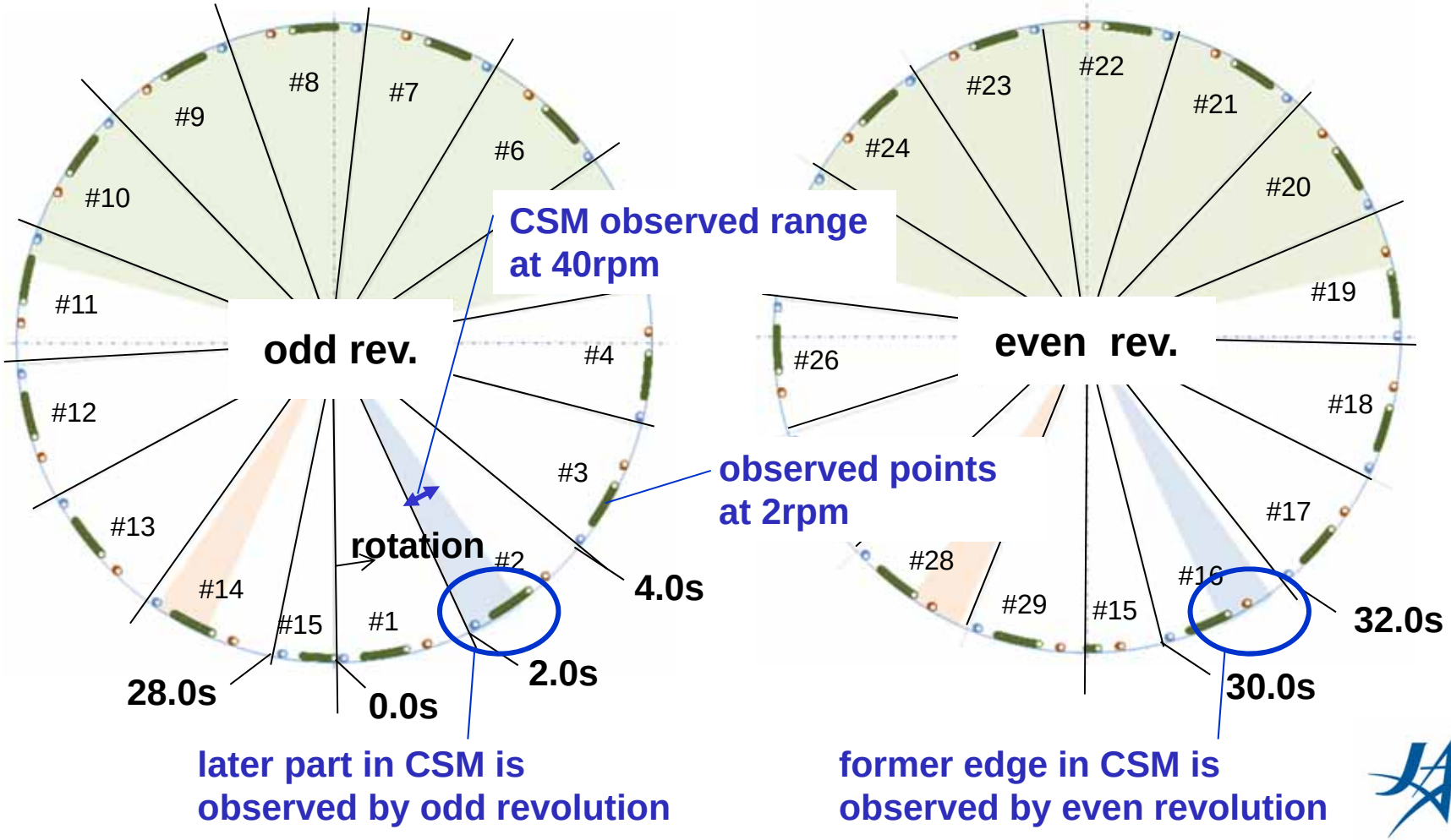
2-rpm Observation

AMSR-E Status

- On December 4th, 2012, observation with continuous rotation at ~2 rpm had been started. (“Stage 3”)
- AMSR-E is rotating very smoothly and steadily at almost identical speed with the control target one.

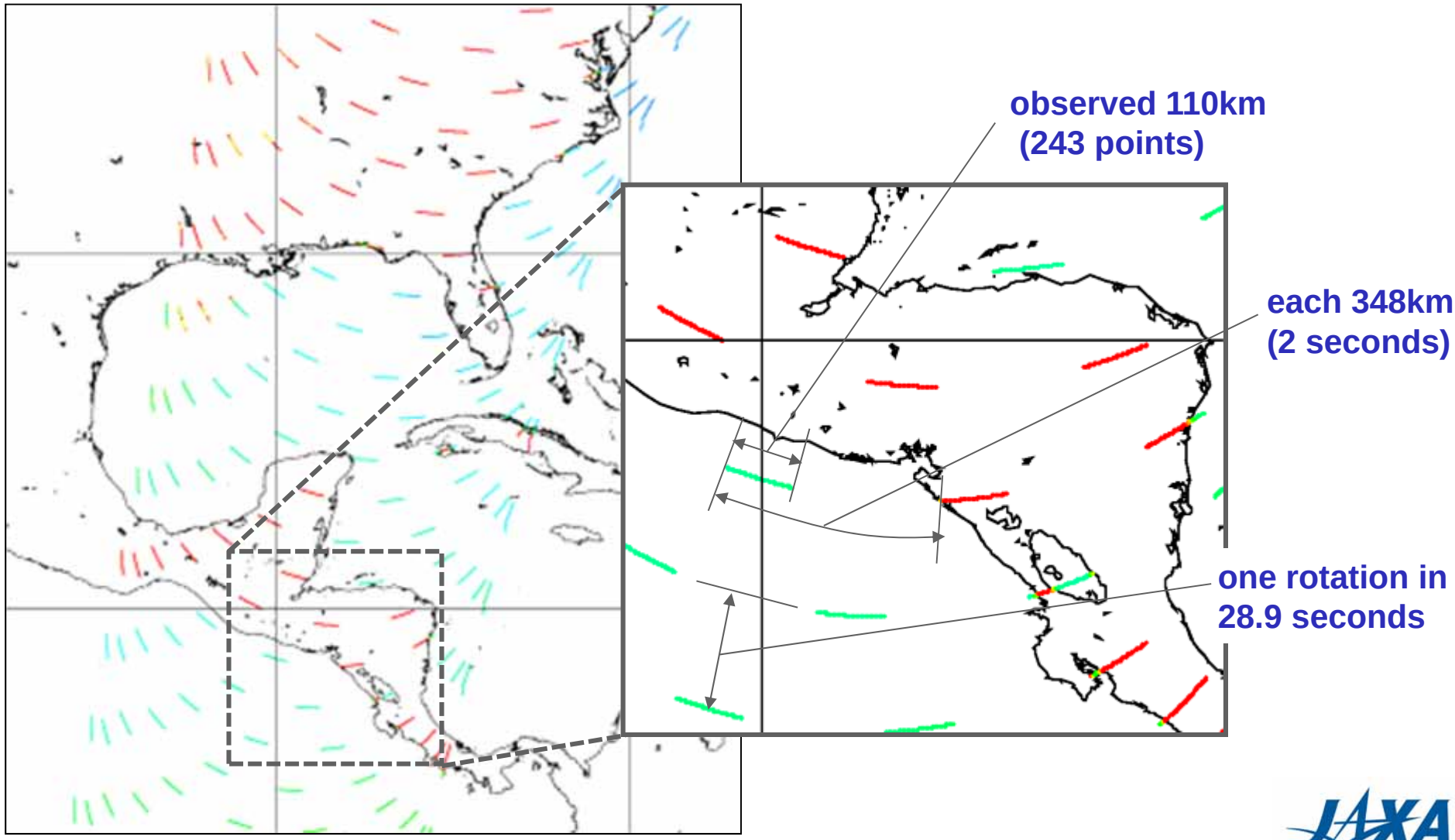
2-rpm Observation

- Observed timing is reset each 2 revolutions.
- Calibration source (CSM or HTS) is observed at once in two revolutions. (per 57.8 seconds @2.076701rpm)



2-rpm Observation

- Earth surface is observed like dash line at 2 rpm.



36GHz-Vpol. 2013-03-11 path=019D @2.076701rpm

2-rpm Observation

RX gain and offset

- Receiver gain and offset parameters are adjusted manually by GND commanding at slow rotation.
  - AMSR-E IOT are monitoring observation data. (include HTS and CSM data)
  - At 40rpm, parameters are adjusted automatically.
- The offset parameter for 89GHz B-horn V-pol. reached its maximum value.
  - Due to above, gain parameter needs to be adjusted in near future to maintain observation optimum.
- This operation will degrade the resolution of brightness temperature.

Processing Status

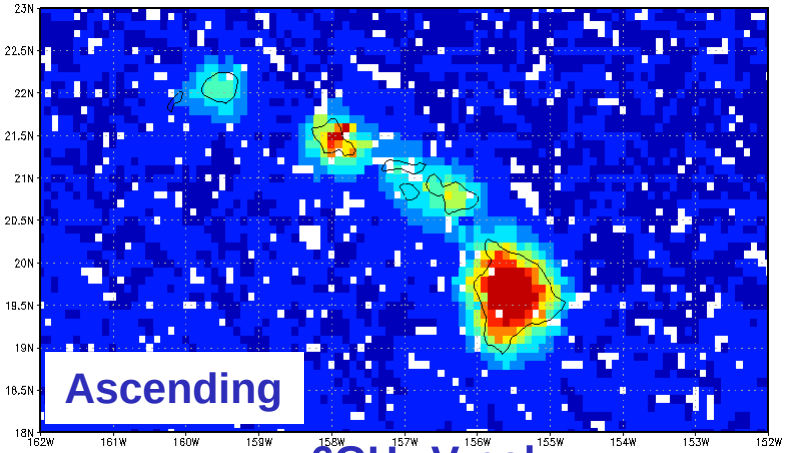
AMSR-E normal level 1 processing software does not work with slow rotation data.

JAXA are developing processing software for slow rotation.

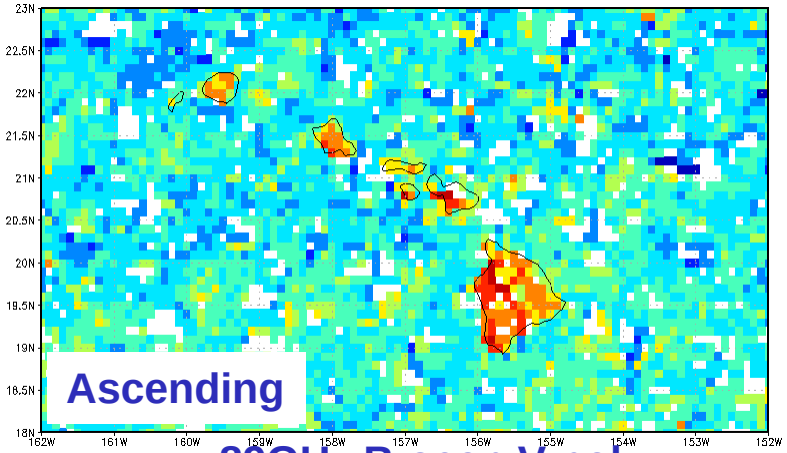
- Geolocation
- Radiometric Correction

Processing Status: Geolocation

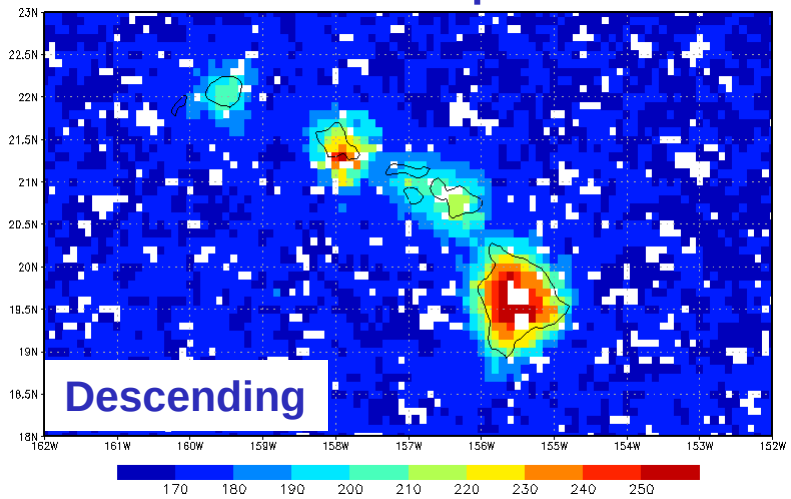
- Software modification, parameter adjustment and processing have been completed.
- Enough quality for Cross-Calibration.

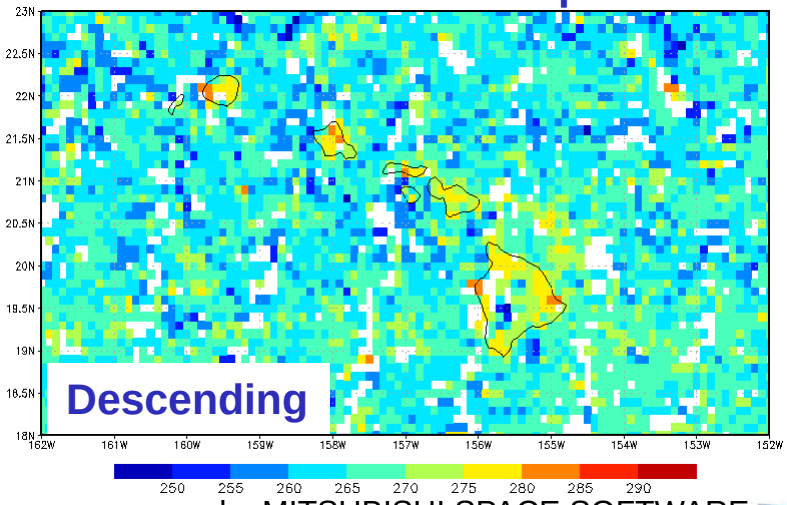


6GHz V-pol.



89GHz B-scan V-pol.



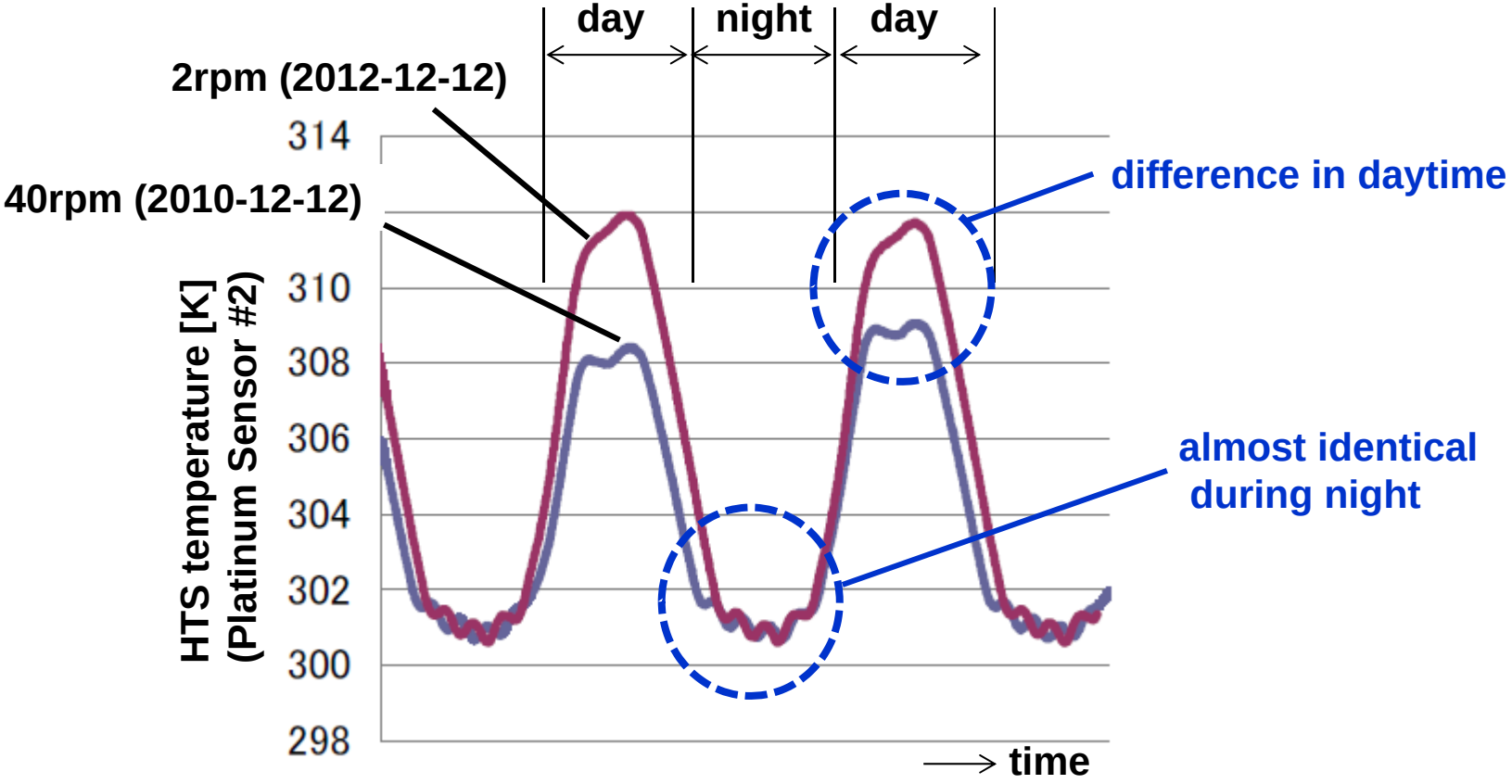


by MITSUBISHI SPACE SOFTWARE

from Dec. 6, 2012 to Mar. 28, 2013 at Hawaii by 0.1 degree grid

Processing Status: Radiometric Correction

HTS thermal equilibrium condition



Processing Status: Radiometric Correction

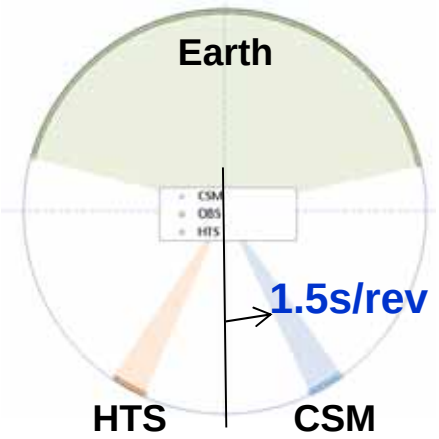
Status

- Software modification is completed.
- JAXA/EORC is checking the output from the modified algorithm for slow rotation.
- After that we will process all data observed at ~2 rpm.

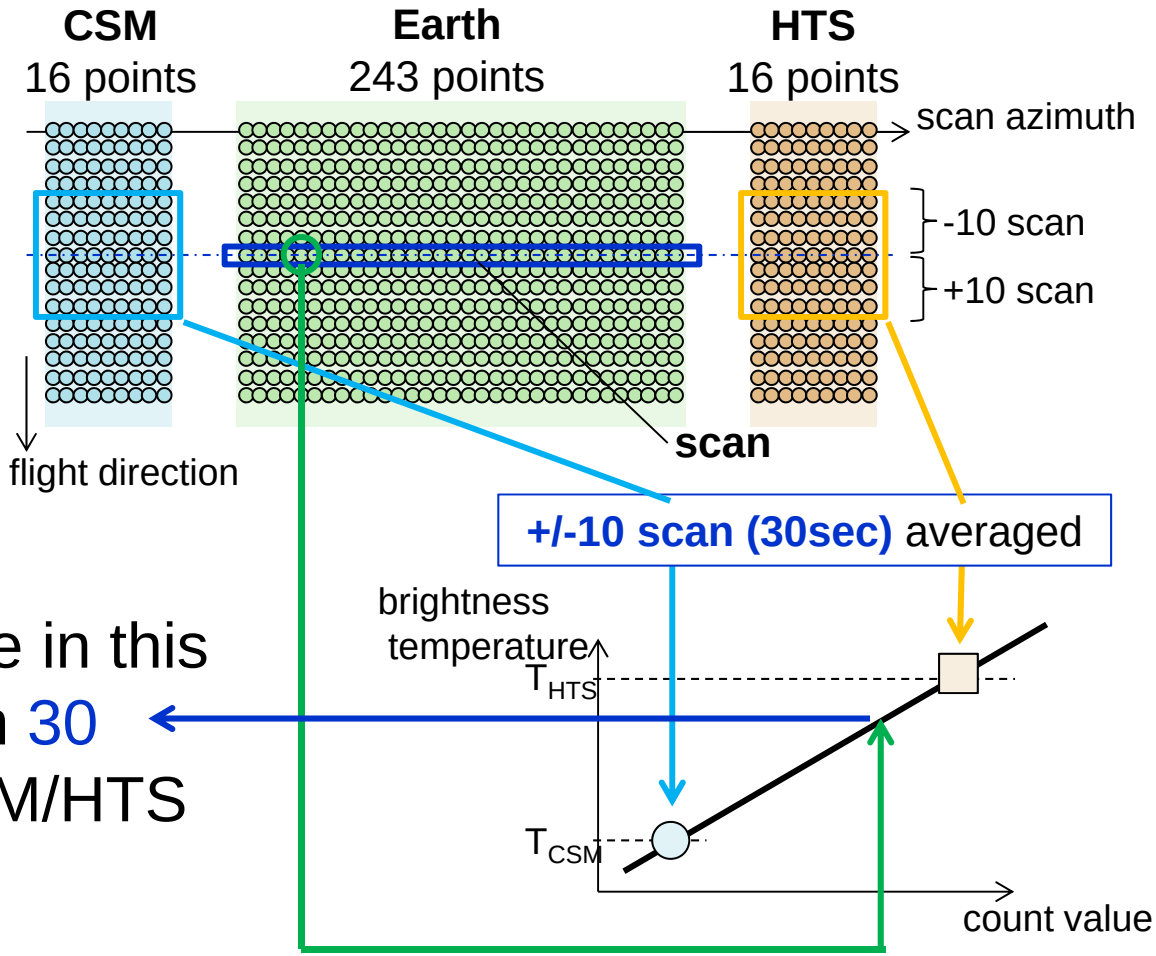
Following slides show what are changed in radiometric correction for 2rpm observation.

Processing Status: Radiometric Correction

40rpm



observed data (count values)

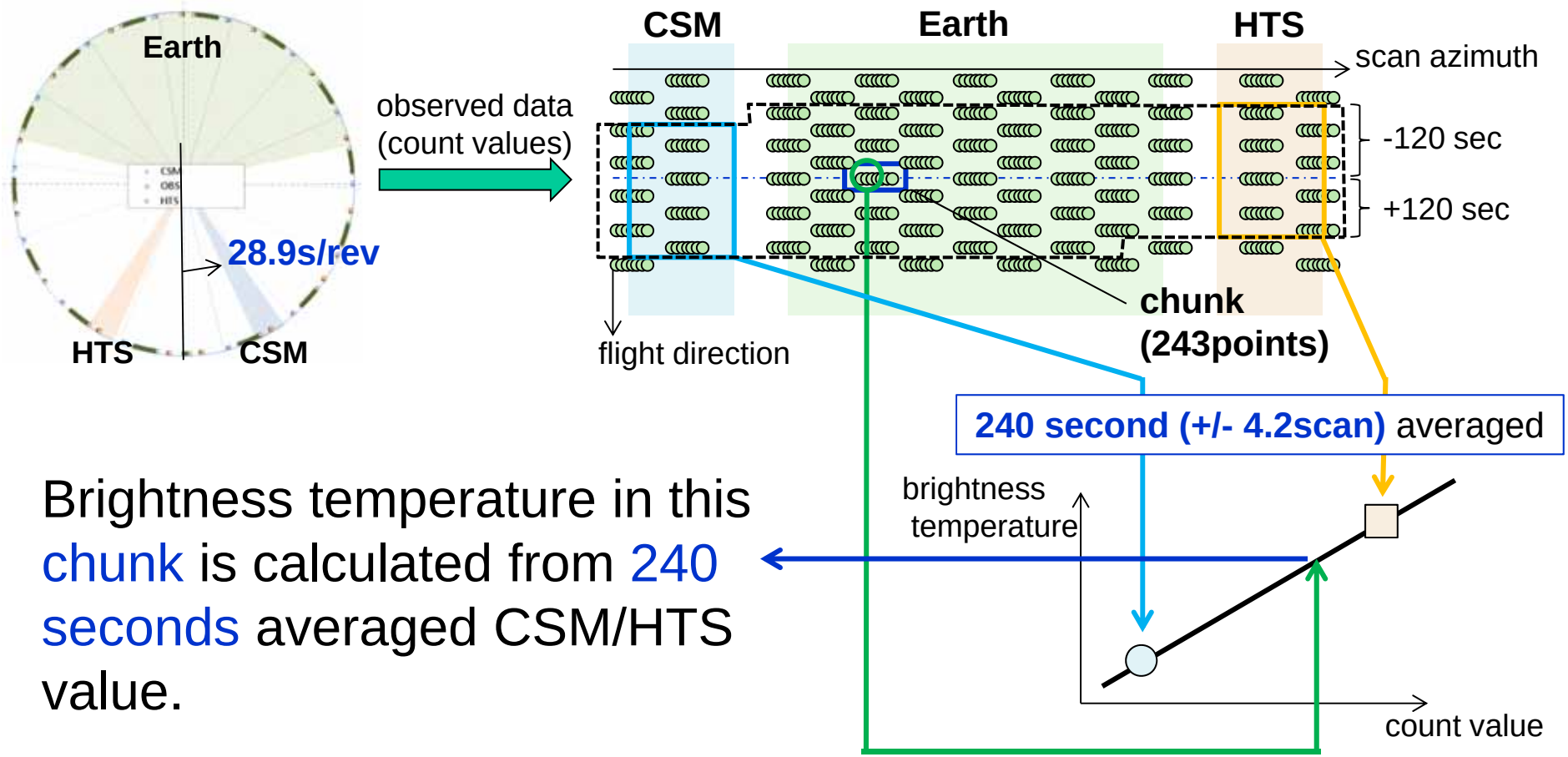


Brightness temperature in this scan is calculated from 30 seconds averaged CSM/HTS value.

Count value is converted to brightness temperature by linear function.

Processing Status: Radiometric Correction

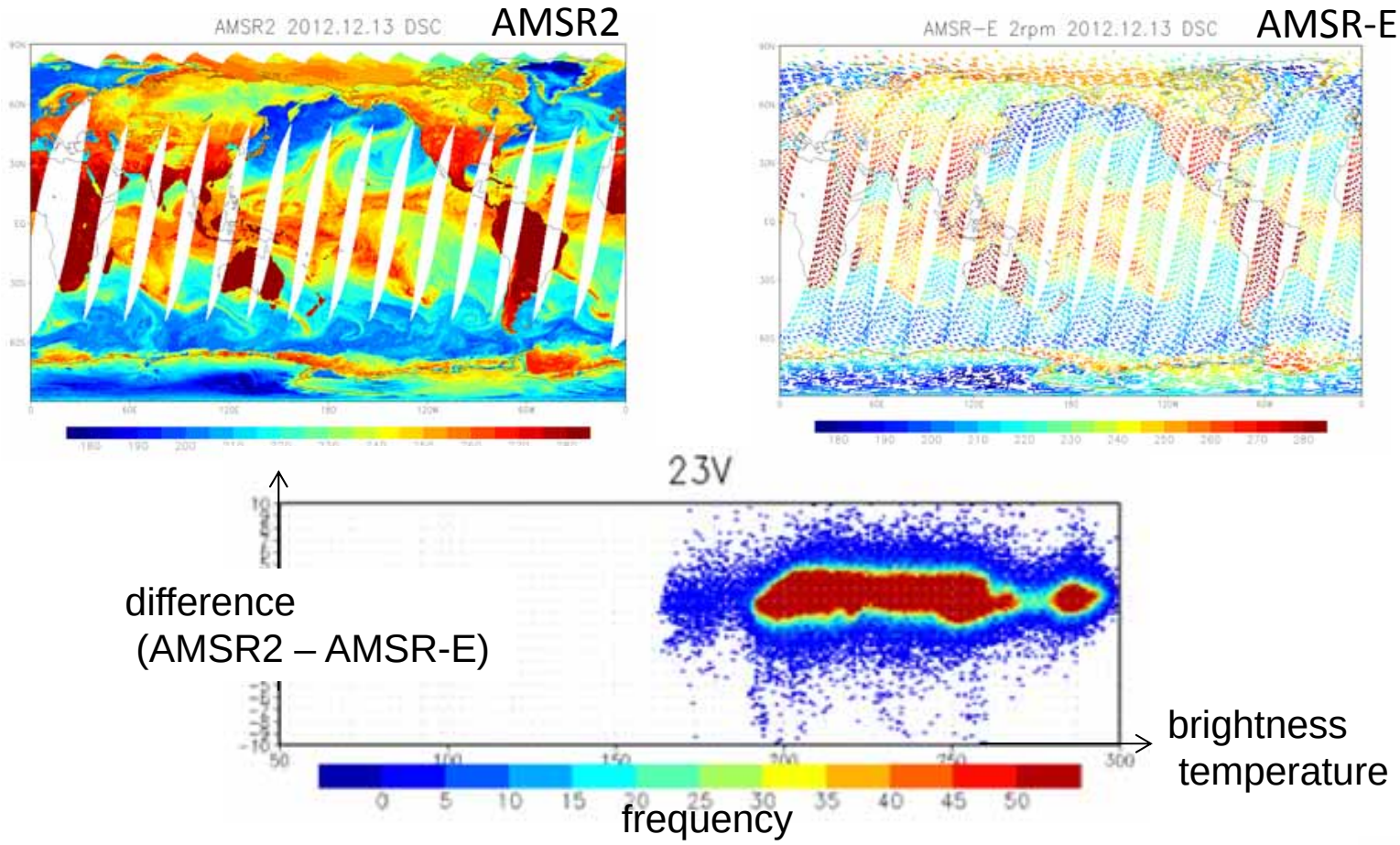
2.076701rpm



Brightness temperature in this chunk is calculated from 240 seconds averaged CSM/HTS value.

Cross-Calibration Status

- Cross-calibration data will be re-validated after all data processing is completed.



SAMPLE FIGURES: AMSR-E values were calculated before our radiometric correction work is completed.

Data Distribution

- Distribution of Level 1 processed 2-rpm data (in HDF format) is coming soon.
  - Quality confirmation, internal authorization, ftp site
- This data is NOT a standard product.

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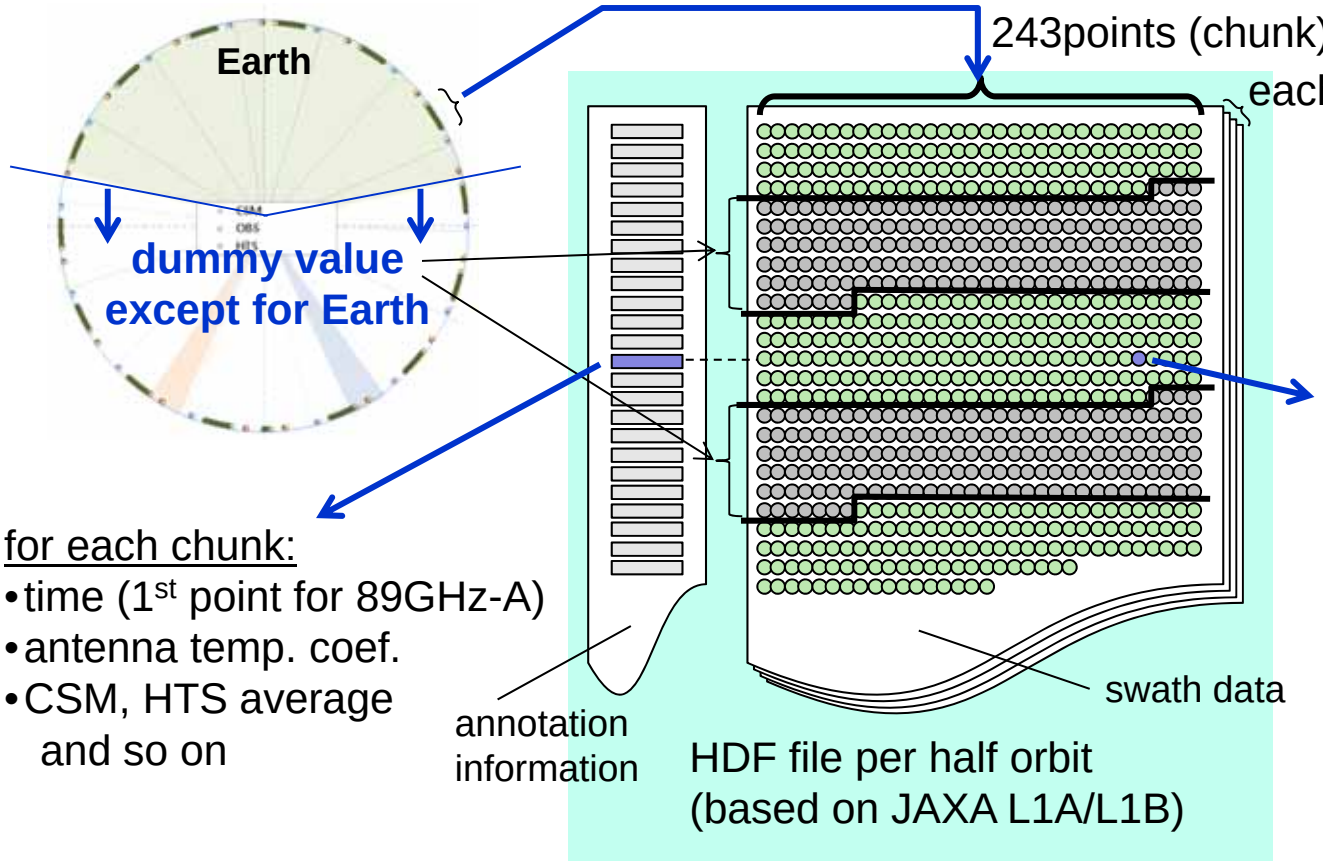
Data Distribution

Slow Rotation Data Format



- Count value is stored within +/- 75deg. Brightness temperature is stored within +/- 61deg. These range are same to JAXA product.
- Individual values for CSM and HTS are not stored. But averaged values that is used to calculate brightness temperature are stored.

THANK YOU

for

your attention