



JAXA Agency Report 2018

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JAXA



Presentation Overview

- ❖ Agency's GSICS Activities, Action & Achievements Summary
- ❖ Agency's support to GDWG Activities
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- ❖ Agency's Instruments Updates & Planned launches – relevant to GSICS if any
- ❖ Introduce/Confirm the Agency's Personnel supporting GSICS
- ❖ Agency's GSICS activities to be discussed in this joint meeting.



Agency's GSICS Activities, Action & Achievements Summary

❖ *Current GSICS Activities*

- GCOM-C/SGLI lunar calibration using GIRO
- Cross-calibration among passive microwave imagers (AMSR2, AMSR-E, GMI, TMI)
- Cross-calibration between TRMM/PR and GPM/DPR
- Submit paper regarding development of new cross-calibration method for IR channels using SST to GSICS News Letter (Kurihara, Murakami and Kachi)
- Preparation of GOSAT-2/CAI-2 lunar calibration using GIRO (ongoing)

❖ *Action Status*

- None



Major changes of calibration for GPM/DPR and TRMM/PR



- ❖ GPM/DPR's calibration factors was changed in V05 released on May 2017.
 - JAXA has re-examined Level 1 calibration carefully over 2yrs, and we determined new calibration factors in Dec. 2016.
 - In order to determine the calibration factors, DPR external calibration was conducted more than 50 times after GPM core observatory was launched.
- ❖ TRMM/PR's calibration factors was also changed in TRMM V8 released on November 2017.
 - TRMM/PR is the first space-born precipitation radar which was completed the operation on 1st April 2015.
- ❖ Better continuity was realized in the GPM/KuPR V05 and the TRMM/PR V8.

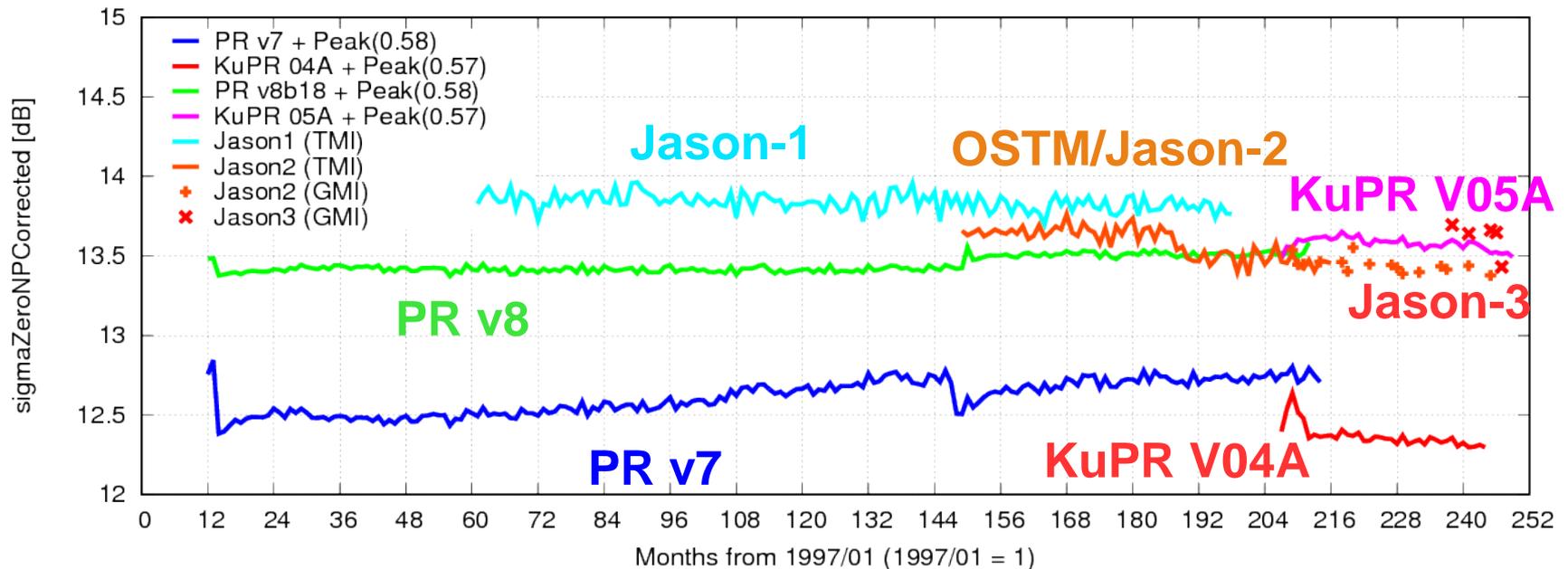


Major changes of calibrations for GPM/DPR and TRMM/PR

❖ Comparisons of the normalized radar cross section (NRCS, σ^0) with various sensors.

→ Better continuity of the TRMM/PR V8 and the GPM/KuPR V05

$$\text{GMF MWRwind}=8 \text{ [m/s]} \quad \text{incAngle} = 0 \text{ [deg]} \quad \sigma_{\text{NPC}}^0(\theta, U_{10}) = \sigma_{\text{NPC}}^0(0, 8)$$



TRMM PR : 13.8 GHz
 GPMCore KuPR : 13.6 GHz
 Jason Poseidon : 13.6 GHz

(*1) σ^0 of PR v8b18 is almost the same with the latest PR V8.
 Sampling biases of PR and KuPR caused by the their range sampling (~125m) are corrected in the figure.



Support to GRWG Activities

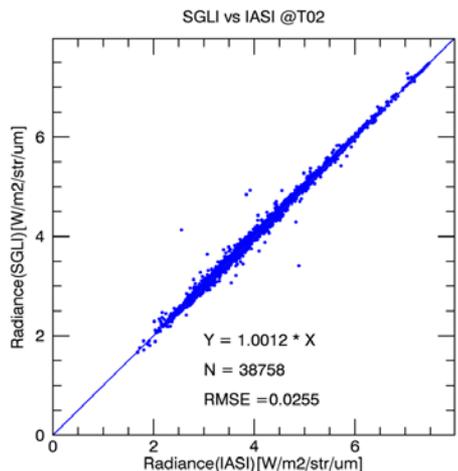
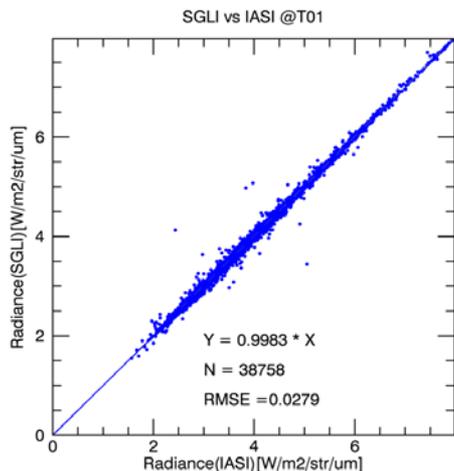
❖ Main contribution to GRWG actions

- GCOM-C/SGLI lunar calibration using GIRO
 - First moon data on 31 Jan and 2 Feb, the next one was on 2 Mar. (once/month, 7deg)
 - Analysis just has started (collaboration with JMA/MSC)
- Preparation of GOSAT-2/CAI-2 lunar calibration using GIRO (ongoing)
- Thermal infrared cross calibration with sounders (next page)
- GCOM-C/SGLI cross calibration with Himawari-8/AHI
- Participation to MW SubGroup (telecons and presentations)

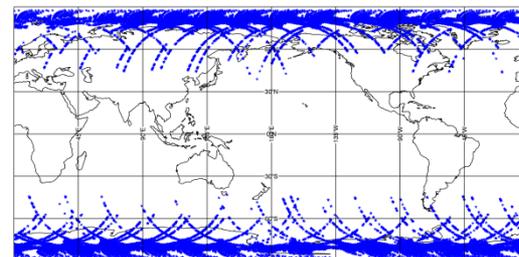


Cross calibration of SGLI thermal infrared bands with satellite sounders

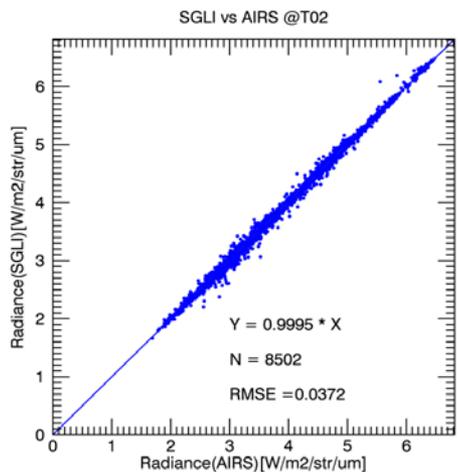
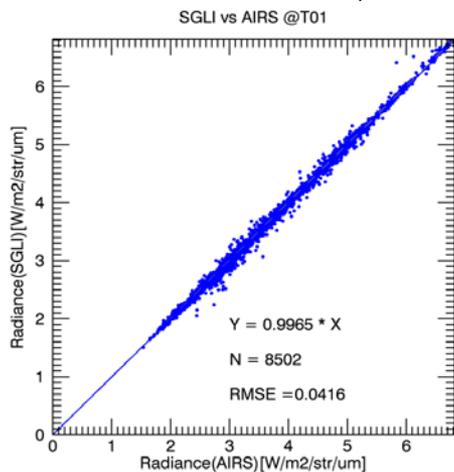
MetOp-A/IASI and SGLI TIR01, TIR02



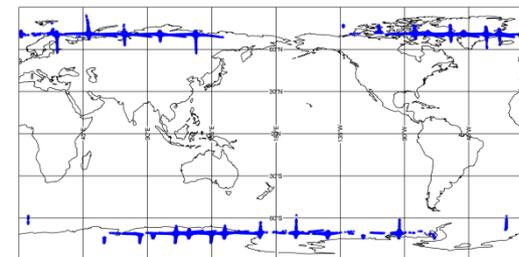
Match-ups in 29-31 Jan 2018



Aqua/AIRS and SGLI TIR01, TIR02

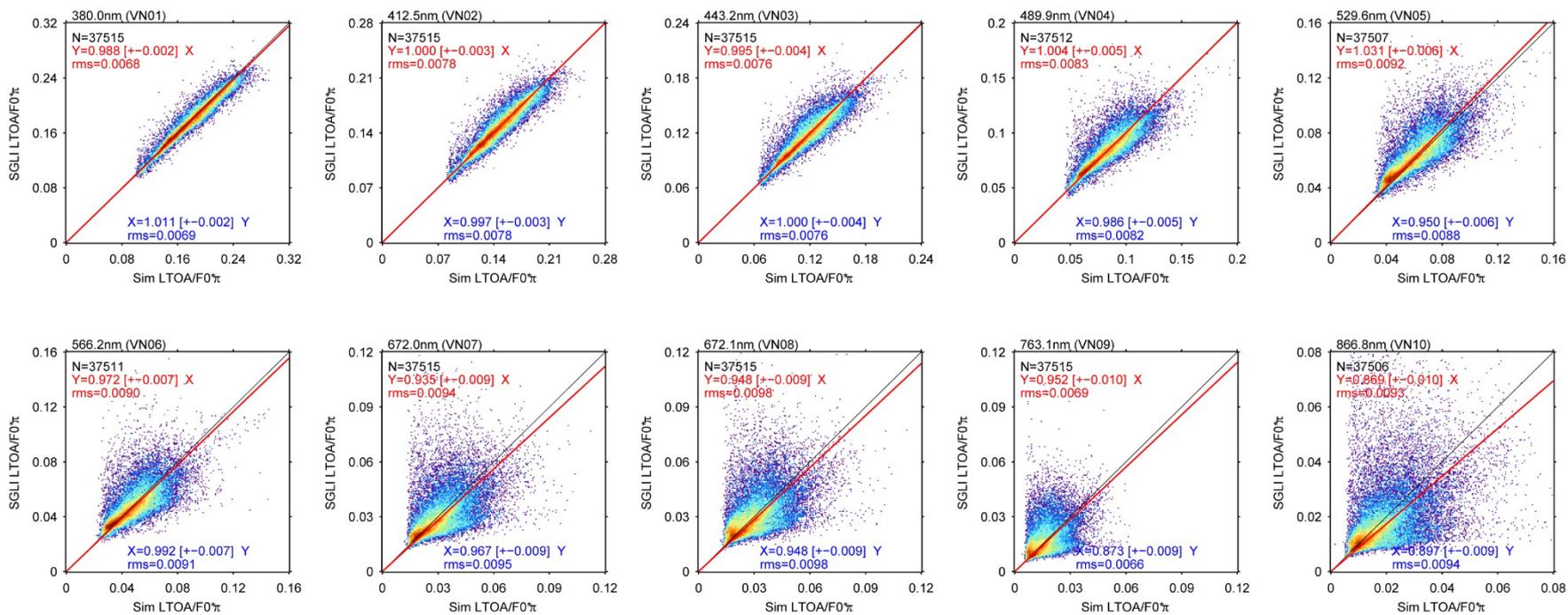
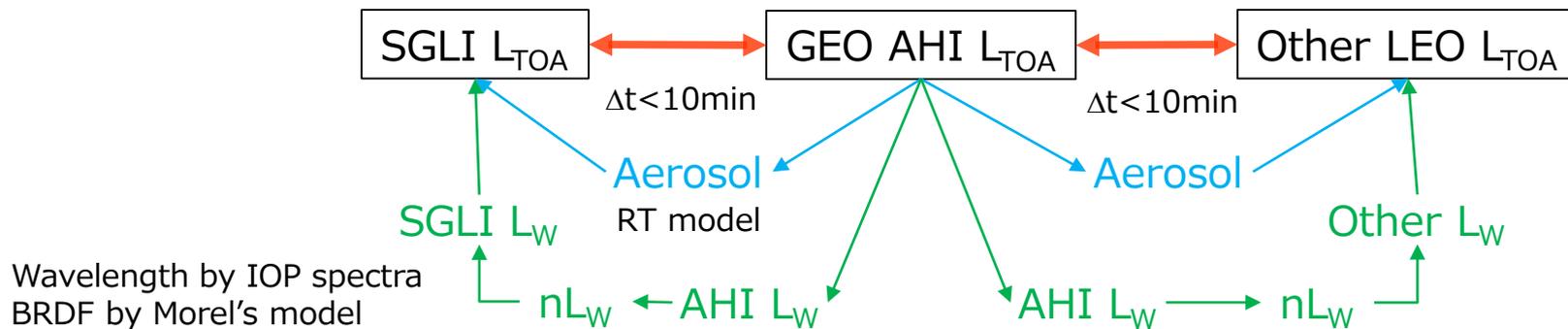


Match-ups in 31 Jan – 10 Feb 2018





Cross-cal of SGLI and AHI (Ocean area)





JAXA's Instruments Updates & Planned launches



❖ *Current in operation*

- *GOSAT: Launched in 2009. Latest version 201.202 was released in 2016*
- *GCOM-W: Launched in 2012. Latest version 3 was released in March 2017*
- *GPM: Launched in 2014. Latest version 5 was released in May 2017*
- *ALOS-2: Launched in 2014. Data release in November 2014*
- *GCOM-C: Launched in Dec. 2017. Data will be released in Dec. 2018*

❖ *Forthcoming launches*

- *GOSAT-2 (JFY 2018), EarthCARE (JFY 2019)*
- *Advanced Optical (JFY 2020), Advanced SAR (JFY 2020)*

❖ *Other major events*

- *JAXA Himawari Monitor system (<http://www.eorc.jaxa.jp/ptree>) is updated in February 2018. Updated geophysical products (aerosol property, SWR/PAR, ocean color), and released new products (L3 wild fire, daily & monthly SWR/PAR and ocean color).*



Introduce/Confirm the JAXA's Personnel supporting GSICS

❖ *GRWG Members*

- Hiroshi Murakami (optical & IR imager, GCOM-C/SGLI, Himawari-8)
- Misako Kachi (MW imager, Aqua/AMSR-E, GCOM-W/AMSR2)
- Takashi Maeda (MW imager, Aqua/AMSR-E, GCOM-W/AMSR2)

❖ *GDWG Members*

- None

❖ *Others who provide supports if needed*

- Yuki Kaneko (precipitation radar, TRMM/PR, GPM/DPR)
- Kei Shiomi (GOSAT, GOSAT-2)
- Takeo Tadono (high resolution optical imager & SAR, ALOS, ALOS-2, Advanced Optical)



Thank you for your attention

WMO GSICS Portal

<http://gsics.wmo.int>

GSICS Coordination Centre

<http://www.star.nesdis.noaa.gov/smcd/GCC/index.php>

GSICS Product Catalog

<https://www.star.nesdis.noaa.gov/smcd/GCC/ProductCatalog.php>

GSICS Wiki

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