

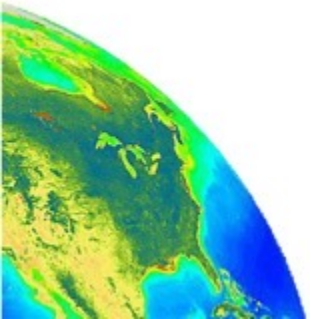


Ocean Colour Satellite Sensor Calibration - Report

**Breakout Session #6 at IOCS 2023 of the IOCCG Task Force
“Ocean Colour Satellite Sensor Calibration”**

Gerhard Meister, NASA Code 616

November 16th, 2023; IOCS 2023, St. Petersburg, FL



Agenda (1/2):

2:30 Gerhard Meister: Introduction

2:40 Gerhard Meister: OCI on the PACE mission: prelaunch calibration overview
(High level overview of prelaunch calibration achievements and on-orbit calibration capabilities)

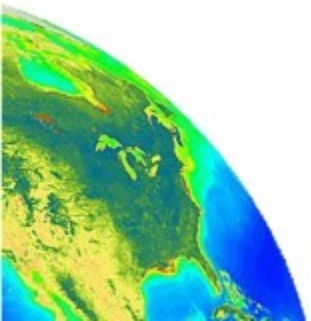
2:55 Jeff Mcintire: Pre-launch Measurements of PACE OCI Response Versus Scan Angle

(Excellent characterization accuracy, except for bands $>1600\text{nm}$)

3:10 Shihyan Lee: PACE OCI pre-launch crosstalk characterization
(Ghosts! Characterized via PSF and RSR measurements)

3:25 Ludovic Bourg: OLCI Level 1 Processor & Products Recent and Coming Evolutions

(Spatial re-gridding improvements, spectral temporal change update, solar irradiance model update, improved saturation flag)



Agenda (2/2):

4:00 Jack Xiong: NOAA-21 Reflective Solar Bands Calibration and Performance
(early mission solar diffuser degradation similar for all 3 on-orbit VIIRS instruments, RSB gain change for NOAA-21 similar to NOAA-20, SWIR gain degrading significantly for NOAA-21)

4:15 Myung-Sook Park: GOCI-II calibration for long term data stability
(trend improvements from solar diffuser derived gain adjustments)

4:30 Hiroshi Murakami: Offset correction
(improved striping performance for SGLI, small bias change)

4:40 Robert Frouin: Crosscalibration of ocean color sensors using TOA radiances from geostationary sensors
(new approach for crosscalibration (after vic. cal.): excellent results for two MODIS instruments, lively discussion about SGLI results)



Presentations will be available here: <https://ioccg.org/group/calib-tf/>



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[Workshop on Satellite Instrument Pre- and Post-launch Calibration \(4 February, 2022, Virtual Meeting\) >](#)

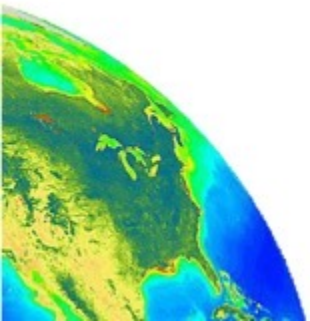
[IOCS-2019 Ocean Colour Satellite Sensor Calibration \(11 April 2019, Busan, South Korea\) >](#)

[IOCS-2017 Calibration Task Force Workshop \(16 May 2017, Lisbon, Portugal\) >](#)

[IOCS-2015 Breakout session on Satellite Instrument Pre- and Post-Launch Calibration \(17 June, 2015, San Francisco, USA\) >](#)

[Workshop on Satellite Instrument Pre- and Post-Launch Calibration \(3 December 2013, Frascati, Italy\) >](#)

[IOCS-2013 Breakout Session on Satellite Instrument Pre- and Post-Launch Calibration \(7 May 2013\) >](#)



Previous Calibration Task Force Recommendations:

- 2013 - Calibration teams from each of the current and future ocean-colour sensor are encouraged to join the international collaborative effort GSICS (Global Space-based Intercalibration System) to help intercalibrate TOA radiances for different low Earth orbit sensors. (Ongoing)
- 2015 - The interpretation of long-term trends in ocean color products should consider the calibration uncertainty in any assessment (Action to the users?)
- 2017 - Promote consistency in pre- and post-launch sensor calibration across multiple missions and multiple space agencies to enable robust blending of data products from a constellation of satellites. (Ongoing)
- 2019 - Every mission should evaluate if for a newly launched sensor, a tandem flight is possible to evaluate calibration consistency (Ongoing)
- 2019 - Gain calibration trends should not contain discontinuities that are not clearly supported by calibration measurements (Completed)

Status options:

- No action needed
- Unmeasurable
- Unfulfilled
- Partial
- Ongoing
- Completed

New Calibration Task Force Recommendations:

- Issue: science community is starting to move away from Thuillier solar irradiance spectrum, towards TSIS (Coddington et al., 2021)
- No consensus among task force participants: some prefer to keep using Thuillier for existing missions, some are switching to TSIS
- New recommendation: all missions should clearly identify which solar irradiance spectrum they are using to produce their science products

