



International Ocean Colour Coordinating Group (IOCCCG) Summary · July 2023 – June 2024

SCOR Annual Meeting 2024 · Qingdao, China & Online

Shubha Sathyendranath, IOCCCG Chair
Raisha Lovindeer, IOCCCG Project Coordinator



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SCOR Affiliate Programme
CEOS Associate Member

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Convenor



IOCS Meeting Coordinator



28th IOCCG Committee Meeting Highlights

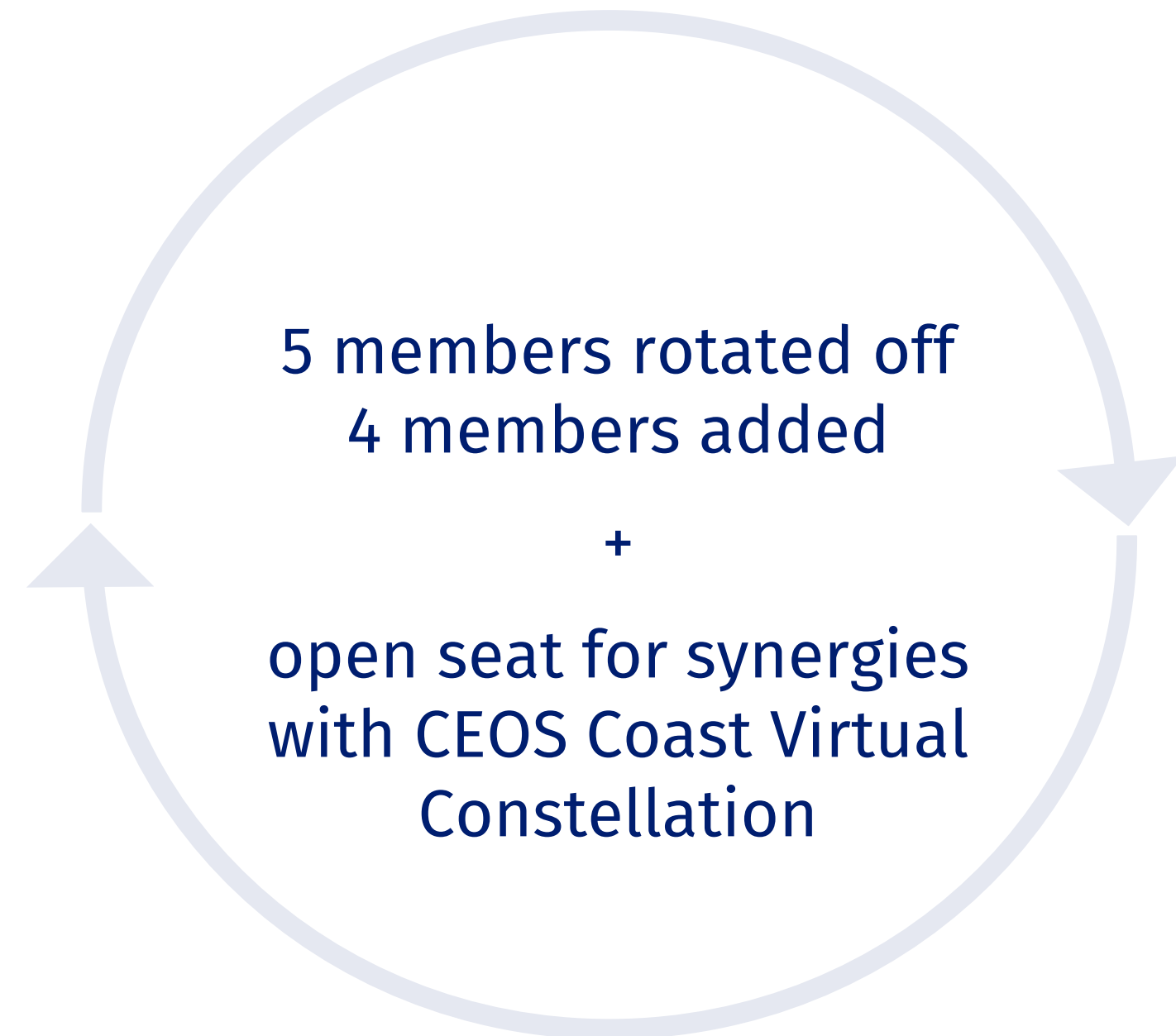
Cordoba, Argentina | 24 - 26 April 2024

- 27 members from the ocean colour community from Argentina, Australia, Brazil, Canada, China, India, Japan, South Korea, USA, UK, France, Germany, Italy, and the wider European Union.
- Priority for synergies across all waters, especially within CEOS



Current chair

Dr. Shubha Sathyendranath
Plymouth Marine Lab, UK



IOCCG Committee Member rotations →

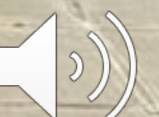


28th IOCCG Committee Meeting Highlights

Cordoba, Argentina | 24 - 26 April 2024

- Discussion on long-term time series ocean colour data products
- Advancing aquatic carbon roadmap & other CEOS initiatives
- Assisting the SabiaMAR ocean colour mission in South America
- Full minutes available online
ioccg.org/what-we-do/committee-meetings

28th IOCCG Committee Meeting, 2024
hosted by CONAE, Córdoba Argentina →





Other Scientific Accomplishments



International Ocean Colour Science Meeting 2023

- Held from 14 - 17 Nov 2023, St. Petersburg, Florida, USA with > 280 in-person participants
- Discussed nine in-depth topics
- Advanced previous community recommendations and added more
- All community recommendations now available on the IOCCG website
iocs.ioccg.org/iocs-recommendations

IOCS Recommendations by topic →



International Ocean Colour Science
Meeting 2023

Advancing Global
Ocean Colour
Observations

IOCS Recommendations

[HOME](#) / [IOCS RECOMMENDATIONS](#)

- + Atmospheric Correction
- + Biodiversity, including Phytoplankton Functional Types (PFT)
- + Climate & Carbon (Long-term Time Series)
- + Data & Datasets
- + High Latitudes
- + Lidar
- + New Technologies
- + Optically Complex Waters
- + Protocols & Training
- + Research to Operation / User Needs
- + Resolution - spectral, spatial, temporal
- + Sensor Calibration
- + System Vicarious Calibration
- + Uncertainties



New White Paper Published

The IOCCG Ocean Colour System Vicarious Calibration (OC-SVC) Task Force released a white paper on the requirements for satellite ocean colour missions targeting climate and global long-term operational applications.

The white paper

- affirms the need for long-term and sustained SVC infrastructure and related activities
- Outlines requirements for comprehensive SVC framework for accurate and consistent global and multi-decadal ocean colour data products

[OC-SVC White Paper →](#)

System Vicarious Calibration requirements for satellite ocean colour missions targeting climate and global long-term operational applications

Executive summary

System Vicarious Calibration (SVC) is fundamental for ocean colour observations. It maximizes the accuracy of satellite ocean colour data products by minimizing the impact of biases affecting the absolute radiometric calibration of the space sensor and the atmospheric correction process. In fact, even if a perfect atmospheric correction was available, SVC would still be needed to solve limitations in satellite sensor calibration. Diverse SVC procedures have been implemented targeting different satellite ocean colour applications such as regional investigations, individual objectives, and, finally, the most demanding climate and operational applications requiring low uncertainties and high consistency across global multi-mission time series. This White Paper, which focuses on SVC for ocean colour missions with global operational and climate goals, results from a dedicated workshop held at the University of South Florida College of Marine Science in St. Petersburg as an initiative of the Ocean Colour SVC Task Force of the International Ocean Colour Coordinating Group (IOCCG). The White Paper affirms the essential need for SVC long-term and sustained infrastructures and related activities. It outlines the main requirements for a comprehensive ocean colour SVC framework with a focus on supporting the climate and global operational applications to ensure the highest accuracy and consistency of global and multi-decadal ocean colour data products. Key recommendations are provided to address future investigations on open issues relevant for SVC principles, requirements, and methods.

Contributors

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Addendum to Protocol 3: In Situ Optical Radiometry

- Request collaboration and cooperation from manufacturers of field radiometers to produce
 - absolute calibration coefficients
 - associated uncertainties
- Data will help users achieve fiducial reference measurement standards in the measurements and data products that result from the radiometers.

IOCCG Protocol 3 on In Situ Optical Radiometry →



**Ocean Optics & Biogeochemistry Protocols for
Satellite Ocean Colour Sensor Validation**

**Volume 3: Protocols for Satellite Ocean Colour Data
Validation: In Situ Optical Radiometry (v3.0)**

Authors

Giuseppe Zibordi, Kenneth J. Voss, B. Carol Johnson and James L. Mueller

International Ocean Colour Coordinating Group (IOCCG) in collaboration with
National Aeronautics and Space Administration (NASA)

IOCCG, Dartmouth, Canada

December 2019

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Draft Dissolved Organic Matter Protocols completed community comment

IOCCG Protocol 3 on In Situ Optical Radiometry →

Ocean Optics & Biogeochemistry Protocols for Satellite Ocean Colour Sensor Validation

Volume 3: Protocols for Satellite Ocean Colour Data Validation: In Situ Optical Radiometry (v3.0)

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Training Sessions & Courses

- *Satellite-based tools for investigating aquatic ecosystems*, April - August 2023, online and in-person at Plymouth Marine Lab, UK
- *Coastwatch, HyperCP, ThoMaS, SeaDAS, MapEO, and SeaHawk-HawkEye CubeSat* at IOCS-2023, 13 November 2023, University of South Florida, USA
- *Satellite Ocean Colour Validation*, 22-23 April 2024, CONAE, Cordoba, Argentina
- *GOCI Toolbox (GTBX) on Snap*, 18 July 2024, COSPAR Annual Meeting, KIOST, South Korea

Students presenting their work in Plymouth, UK →



IOCCG Platt Scholarship

USD \$5000 awarded to a student / scholar from a developing country to conduct hands-on research or receive in-depth training in ocean colour at a foreign institution for up to 3 months.



Our 2024 awardee →



Hellen Joseph Kizenga
Tanzania

Proposed research: Seasonal and interannual variability in phytoplankton biomass and phenology (bloom timing) along the Tanzanian waters using ocean colour sensors with Emmanuel Devred at the Bedford Institute of Oceanography, Halifax, Canada.

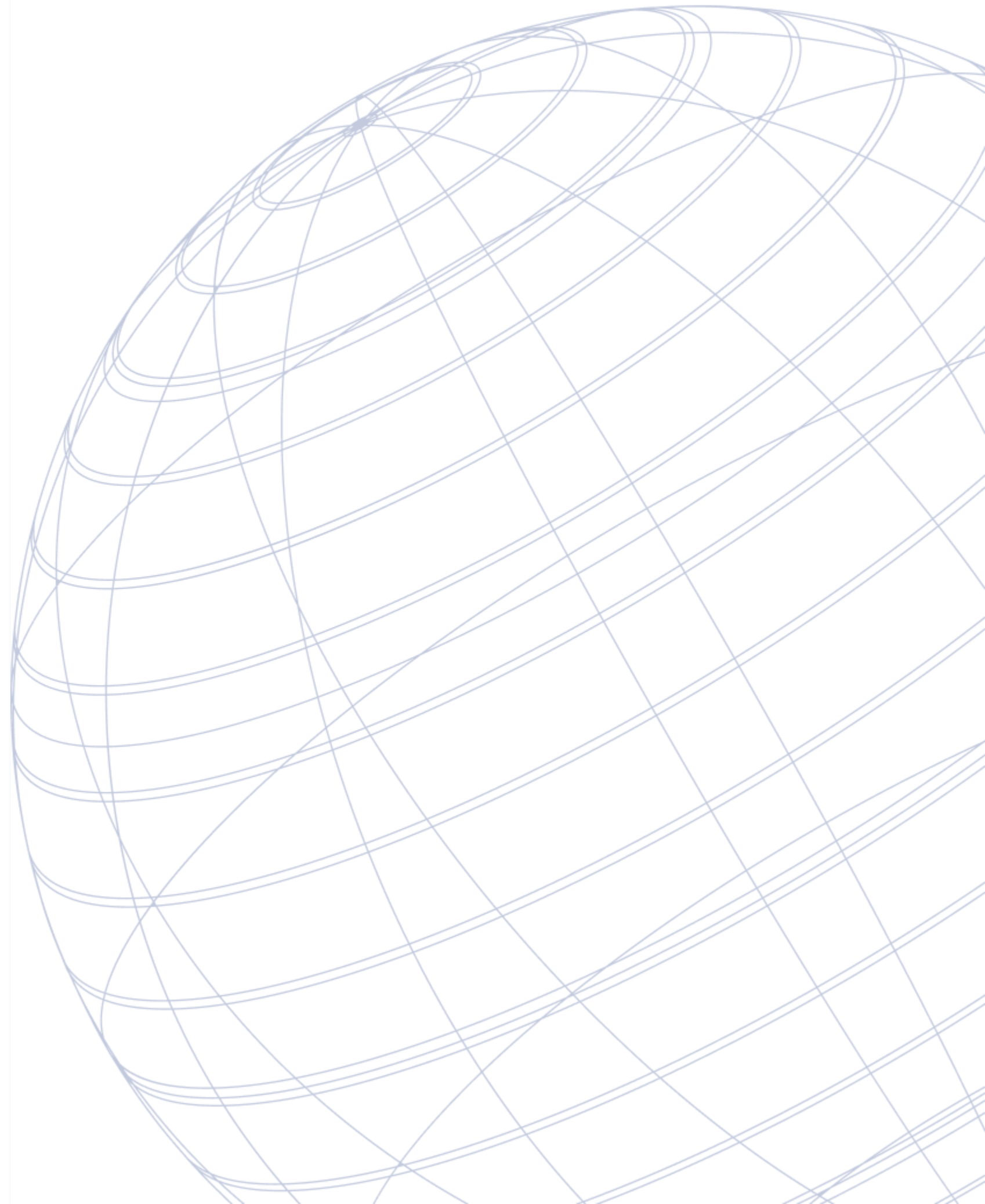




Plans for Scientific Development & Implementation

Capacity-building

- Open call for 2025 IOCCG Platt Scholarship.
- Proposed trainings
 - IOCCG-30 Committee meeting in Tokyo, Japan in 2026
 - collaboration with the Trevor Platt Science Foundation on training and symposium
 - Joint massive open online courses with existing agencies
 - trainings of opportunity



6th IOCCG Lecture Series

4 - 16 November 2024, hosted by INCOIS in India

- Biennial 2-week advanced training course on the fundamentals of ocean optics, bio-optics and ocean colour remote sensing to help produce future leaders in the field.
- Local coordinator Dr. Nimit Kumar
- 30 participants selected for 2024.



ioccg.org/what-we-do/training-and-education/educational-links-and-resources

Location of the 2024 Lecture Series →





International Ocean Colour Science Meeting 2025

- 1 - 5 December 2025, Darmstadt, Germany.
- Hosted by ESA & EUMETSAT.
- Venue to discuss topics relevant to agencies with vested interest in ocean colour science and applications:
 - ocean carbon & climate
 - biodiversity
 - water quality
- Associated training sessions

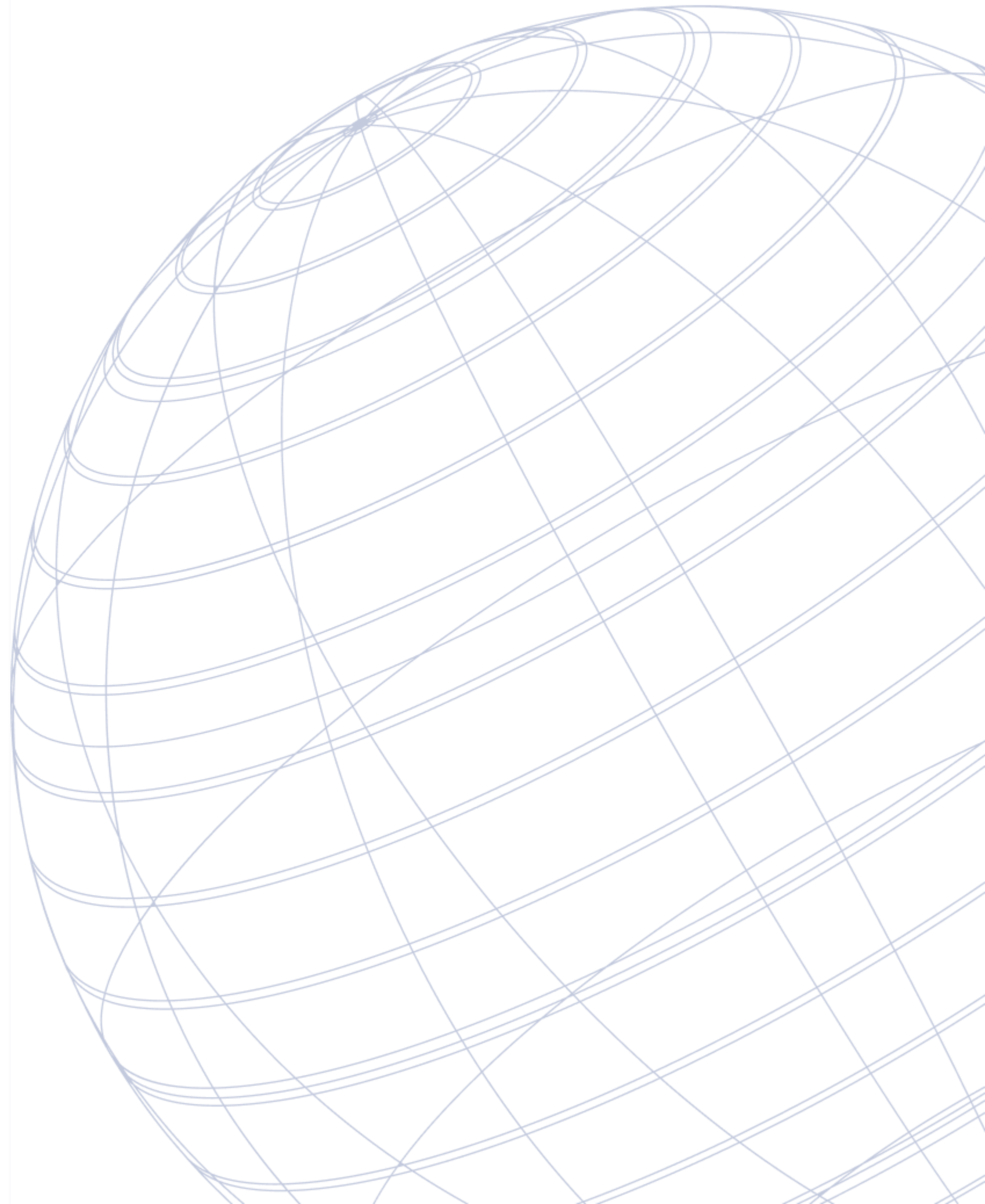
iocs.iocccg.org

The 2025 venue →



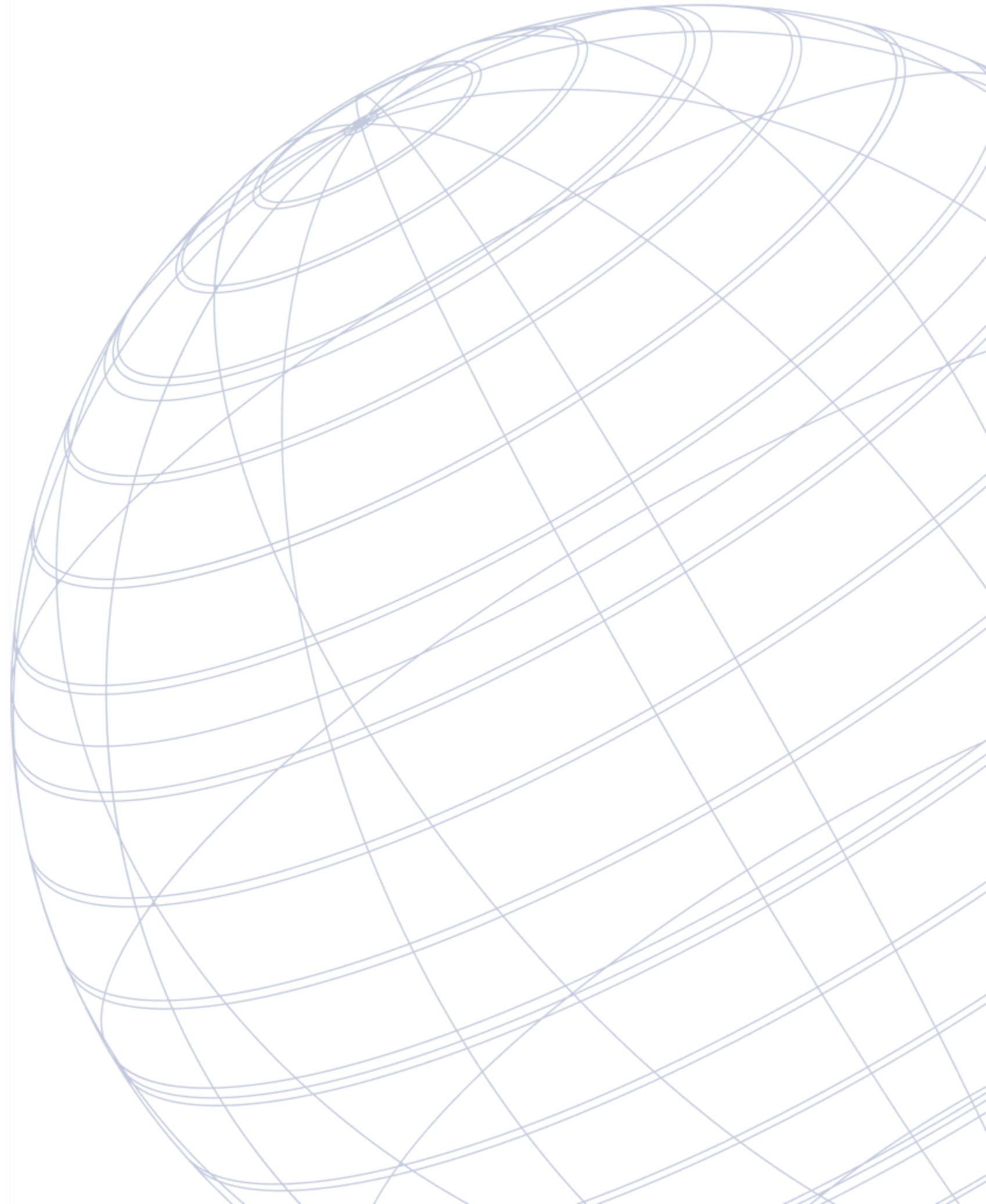
Other on-going activities

- Open call for white papers on recommendations for the future of ocean colour (in support of the 2027/28 US Decadal Survey and other agency planning activities).
- Ad-hoc committee on climate-applicable long-term time series ocean colour data products
- Working group report on Intercomparison of Atmospheric Correction Algorithms over Optically-Complex Waters



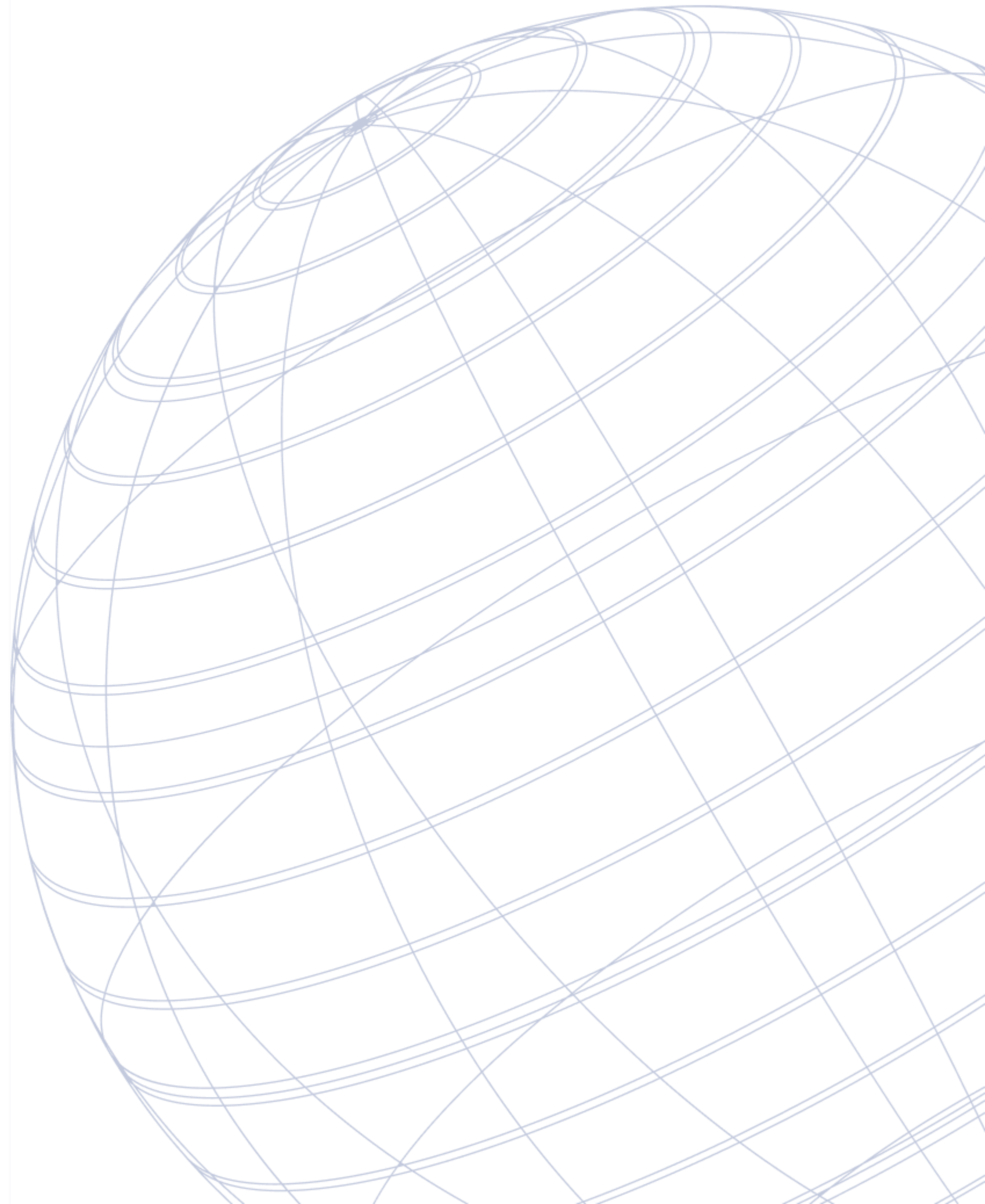
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Other on-going activities

- **Active IOCCG working groups**
 - Conducting Benthic Reflectance Measurements
 - Ocean Primary Production from Space
 - Classification of Optical Water Types in Aquatic Radiometry
- **Active IOCCG task forces**
 - Ocean Carbon
 - Hyperspectral Remote Sensing of the Ocean
 - Remote Sensing of Marine Litter and Debris
 - Ocean Colour Satellite Sensor Calibration
 - Ocean Colour System Vicarious Calibration (OC-SVC)
- **Active NASA grant with SCOR (2023-2026) for continued activities of working groups and task forces.**





IOCCG Chair

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Other ways to stay in touch

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