

Breakout Workshop 6: Research to operations (R2O)

Chair: Veronica Lance, NOAA (Veronica.lance@noaa.gov)

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The value to society of satellite-based ocean colour (OC) remote sensing observations is realized when they are used to improve decision outcomes. For OC to be incorporated routinely into downstream user operations, data products must be consistent, routine and sustained, mature, relatively stable, fit-for-purpose, discoverable, and accessible in forms conducive to their use. The new paradigm of “operational” satellite data extends beyond near-real time to also include consistent, longer term time series. Given the multiple satellite missions now routinely providing robust OC data along with additional missions anticipated in the near future and out into the coming decades, OC has reached the maturity to be incorporated into downstream operational applications, yet barriers remain.

The 2013 IOCS splinter session, Operational Ocean Colour Data in Support of Research, Applications and Services, produced 15 recommendations. In the past ~6 years, many of these recommendations have been implemented. This workshop will assess the status and impacts of the 2013 recommendations and consider the next level of progress from the perspectives of users (clients), remote sensing scientists, and those working to bridge gaps between them. Our goal is to identify executable steps toward getting OC data into more applications where they can make a positive impact on decision outcomes. The scope includes both 1) broad, efforts in making OC data more accessible (intellectually and functionally) to a wider audience and 2) narrow, vertically integrated services that drive the value chain from earth observations to actionable information for targeted applications.

This workshop will aim to answer the question:

Where are the biggest gaps or obstacles in achieving fit-for-purpose OC data that meet the needs of operational users and how can we close these gaps and reduce obstacles:

- data quality
- value-added products
- data availability, access and discovery
- documentation, training and outreach
- ease of use, inter-operability, standardization, tools?

To help to answer this question, requirements and experiences will be discussed based on operational application cases, such as harmful algal bloom forecasting, coral reef and fisheries management, ocean prediction, and various commercial applications.

Key Questions

- 1) What are the user requirements for operational OC products and where should the main research and technical efforts be concentrated?
- 2) What developments in approaches, techniques and/or tools are needed to address users at multiple levels of sophistication, how best to supply necessary details while not overwhelming as needed for free and open access to data through multiple outlets and serving distinct and diverse audiences?
- 3) What mechanisms are useful to bring developers and users together at early stages and how best to engage parties to achieve successful implementation?

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| Co-chairs | Veronica Lance (NOAA) and Ewa Kwiatkowska (EUMETSAT) |
| 14:00 – 14:10 | Overview “operational” ocean colour satellite remote sensing, review and update on the 2013 recommendations, set out the objectives for this workshop Veronica Lance (NOAA) and Ewa Kwiatkowska (EUMETSAT) |
| 14:10 – 14:20 | Discussion: identification of recommendations from 2013 which are incomplete but still relevant, input on session objectives |
| Obstacles and successes with operational OC data services | |
| 14:20 – 14:30 | Dabin Lee (Ph.D. student, Pusan National University, S. Korea) – Remote sensing for applied fisheries research |
| 14:30 – 14:40 | Cara Wilson (NOAA, US) – NOAA Fisheries Management |
| 14:40 – 14:50 | Stewart Bernard (CSIR, South Africa) - National Oceans and Coastal Information Management System (OCIMS) |
| 14:50 – 15:00 | Mario Castro de Lera and Pablo Ruiz Sánchez, Deep Blue Globe, UG (EU commercial; ESA incubator) |
| 15:00 – 15:20 | Discussion: where is the biggest gap in achieving fit-for-purpose OC data? Where should the main research, technical, training and outreach efforts be focused? |
| Approaches, techniques, tools to address users at multiple levels of sophistication | |
| 15:20 – 15:30 | Experience from user training Hayley Evers-King (EUMETSAT / PML) |
| 15:30 – 15:50 | Discussion: what details best to supply what to do not to overwhelm |
| Bringing agencies, information services and users together | |
| 15:50 – 16:00 | Assuring the broad uptake of OC data services Gianluca Volpe (CMEMS) |
| 16:00 – 16:20 | Discussion: how to know if data are “fit-for-purpose”? |
| 16:20 – 16:30 | Key points, synthesis and actions Veronica Lance (NOAA) and Ewa Kwiatkowska (EUMETSAT) |