

Breakout Workshop: Research to Operations (R2O) Applications

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Description of Breakout Workshop

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 cover efforts aimed to support a broad range of users to understand, access and make appropriate use of OC including 1) derived and “value-added” product development; 2) data discovery, access, manipulation and quality monitoring (for example, data viewers and portals, quality monitors, software tools, etc.); 3) training and outreach; 4) facilitation of routine data assimilation and model validation. We will also cover deeper value chains with a narrower focus. Requirements of early adopters using OC for operational applications, such as for harmful algal bloom forecasting are evolving and well-established applications historically based on other observations (e.g., satellite SST) such as coral reef and fisheries management, ocean prediction, and various commercial applications are bringing in OC to improve (in scope, accuracy, timeliness, etc.) those forecasts. These developments may be in response to, or in anticipation of, decision-makers’ demands.

This workshop will also set objectives for the OC community's engagement in the First International Operational Satellite Oceanography (OSO) Symposium (June 2019, Washington, DC) where the major themes will be: redefining the "operational" paradigm for oceans; the "data supermarket" whole system functionality; end-to-end integration and interoperability; and linking users and providers.

The workshop structure will be composed of some invited presentations providing an overview of challenges and key questions followed by short talks representing both the wide audience and the targeted value chain approaches interspersed with moderated white-board discussions to address key questions, evaluate progress of the 2013 recommendations, document new recommendations for 2019, identify potential contributions to the OSO symposium and synthesize other outcomes.

Key Questions

- 1) What mechanisms are useful to bring developers and users together at early stages and how best to engage parties to achieve successful implementation?
- 2) What are the user requirements for operational OC products and where should the main research efforts be concentrated?
- 3) 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?
- 4) What can the IOCS community contribute to and expect to benefit from the OSO symposium?