

IOCS 2017 Breakout Workshop 9: Carbon in Ocean Colour

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Background

- Use of ocean colour in studies of ocean carbon pools (dissolved and particulate, organic and inorganic) and carbon fluxes is critical to close the global carbon budget.

(CEOS Strategy for Carbon observations from space)

- Novel applications, such as using ocean-colour data to derive parameters of primary-production models, need further development for use in climate studies.
- Along the current state of the art, particulate organic and inorganic carbon are provided as standard products from various ocean colour missions.

CLEO Recommendations

- Colour and Light in the Ocean (CLEO) workshop, 6-8/9/2016
- Remote Sensing Products
 - Characterise and improve relationship between “standard” OC products and Carbon
 - CDOM <-> DOC
 - Improve POC in coastal and inland water bodies
 - Phytoplankton optical properties <-> typology and size distribution <-> Carbon contents
 - Study feasibility of Particulate Inorganic Carbon (PIC)
 - Study OC potential contribution to Dissolved Inorganic Carbon assessment
- Climate Model Needs
 - Surface and integrated Primary Production
 - Phytoplankton carbon and distribution of PFT in terms of C content
 - Total particulate and dissolved carbon pools

Breakout Goals

- Goal 1:
To assess the performance and limitations of the current relevant carbon products.
 - approaches towards **validation** of these products
 - approaches towards consistent **implementation** of these products in global **operational processing systems** across missions.
- Goal 2:
To liaise with the modellers to understand the requirements for further Carbon products, including **chlorophyll:carbon ratio** and **dissolved organic carbon**.

Outline

- 14:10-14:25 Particulate Organic Carbon and phytoplankton carbon: algorithm comparisons (Hayley Evers-King, PML)
- 14:25-14:40 Dissolved carbon (organic and inorganic) in the ocean (Jamie Shutler, U. Exeter)
- 14:40-14:55 A modeller's perspective [Validity and impact of satellite products] (Cecile Rousseaux, NASA/USRA)
- 14:55-15:10 Carbon in coastal waters (Hubert Loisel, LOG)
- 15:10-16:45 Discussion

Seed Questions

- Where are the critical shortcomings and needs ?
- What is ready for operational agencies to pick up ?
- Algorithms development and validation: what actions are needed ?
- What is needed from in situ observations ?
- What are the priority directions ?
- Where are your needs evolving ?