

## MULTI-WATER ALGORITHMS AND PERFORMANCE ASSESSMENT

**Co-chairs:** Ewa Kwiatkowska (EUMETSAT), Bridget Seegers (NASA), Carsten Brockmann (Brockmann Consult), Tim Moore (Uni. New Hampshire), Blake Schaffer (US-EPA), Susanne Craig (Dalhousie University)

### Multi-Water Algorithms

The session will seek recommendations towards approaches that can deliver smooth transitions between open ocean, coastal and inland waters. There are many challenges facing the quality and fitness for purpose of operational products which straddle different water types. The challenges lie in the atmospheric correction as well as in the bio-optical water parameter extraction. Some missions include different global algorithms and leave it to the users to decide which products to use, such as Sentinel-3 OLCI open-ocean and turbid-water products. However, multi-water products could open up ocean colour to users less familiar with intricacies and complexities of algorithms and implementations. The breakout session will determine short- and longer-term activities that could be put in motion towards the development of blended products.

### Algorithm performance assessment

The number of ocean colour algorithms available to the community has increased in recent years, along with the need for more highly-tuned algorithms to inform models, decision support, and management. The ocean colour community has generally relied on a finite set of statistical tools for algorithm assessment, which limits the ability to compare algorithms with minor differences. This session seeks to accumulate input and recommendations on developing an objective classification system for algorithm performance. **Key questions include:** What statistical metrics and strategic approaches should be used to best evaluate algorithm performance? How best to inspire the community to make changes to assessment approaches?

The strategies proposed for the algorithm performance assessment will be used to define specific selection criteria for multi-water algorithms. An initial uncertainty metric for the test case of multi-water products will be discussed.

**14:00 - 14:05** Session Introduction (Ewa Kwiatkowska and Bridget Seegers)

### **Part I: Multi-Water Algorithms and Algorithm Performance Assessment**

**14:05 - 14:15** User requirements for blended multi-water products  
Stewart Bernard (CSIR)

**14:17 – 14:27** Overview of atmospheric correction methods for open-ocean, coastal and inland water transitions  
Menghua Wang (NOAA)

**14:29 – 14:39** Overview of bio-optical algorithms for open-ocean, coastal and inland water transitions  
Daniel Odermatt (Odermatt & Brockmann GmbH)

**14:41 – 14:51** Assessing algorithm performance and blending in the context of optical water classes  
Thomas Jackson (PML)

**14:53 – 15:03** Needs and approaches to algorithm assessment  
Rick Stumpf (NOAA)

**15:05 – 15:20** Break

### **Part II: Moderated Discussion Multi-water and Algorithm Assessment (Moderators: the co-chairs)**

**15:20 – 16:30** **Multi-water:** user requirements, atmospheric correction, bio-optical algorithms, definition of multi-water demonstration products

**Algorithm Assessment:** statistical metrics and strategic approaches, How best to inspire community change

**Uncertainty metric for multi-water products**

### **Part III: Actions & Recommendations (Moderators: E.Kwiatkowska, B. Seegers)**

**16:30 – 16:45** Formulation of Actions and Recommendations