Breakout Workshop:

SI-Traceable In-Situ Aquatic Radiometry:
Bridging the Gap Between Different Measurement Methodologies

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Scope and Goals

In situ aquatic radiometry is a necessary step in all ocean colour/aquatic products derivation, from open ocean to coast and inland waters. Recent improvements in technology and heritage from pre-existing efforts such as AERONET-OC and MOBY allowed for the development of in situ networks of hyperspectral radiometers. This includes “un-docked” profilers such as BGC Argo, HyperNAV, and drones (AUV) with multi- and hyperspectral cameras, as well as hyperspectral radiometry from fixed platforms. While the latter permit us to have a better understanding of unsampled regions of the global ocean, the second are easier to maintain operationally and produce massive numbers of high quality match-ups, albeit restricted to coastal regions. In either case, all AR instrumentation and families of methods require a robust link to SI units, entailing knowledge about the instruments characterisation in changing environmental conditions, coherent measurement, data reduction and quality assurance protocols and open-for-scrutiny processing. The most critical element for all in situ radiometry methodologies is the modelling of correction steps such as glint correcting for above water methods, extrapolation to the surface and above for in water methods, and BRDF correction for all.

Key Questions

1. What should be our priority when addressing existing discrepancies between the aquatic radiometry methods?

2. Could the global SVC sites be used as “primary standard laboratories” at sea from where the in situ radiometry scale can be disseminated to all other measurements?

3. How can we design a field experiment that profits from SVC instrumentation and allows us to test optical closure between the aquatic radiometry methods?