

# OCEAN OPTICS XXIV

Valamar Lacroma Dubrovnik Hotel | Dubrovnik, Croatia | October 7–12, 2018

<https://oceanopticsconference.org>

Monday, October 8

Poster Session 1

16:00–18:00

## Poster 9

### GLIMPSES OF THE BIO-OPTICAL VARIABILITY IN COASTAL WATERS OF WESTERN AUSTRALIA FROM A “THETIS” PROFILER MOORED OFF PERTH

A WET Labs “Thetis” moored profiler was deployed off Perth, Western Australia, in an attempt to start characterizing bio-optical variability in coastal waters (depth ~60m) of this Eastern Indian Ocean environment. Objectives also include evaluating diel variability in bio-optical and other properties in view of determining ecosystem productivity, and delivering reflectance matchups for current ocean color remote sensing satellite missions (in particular the Copernicus Sentinels). Collected parameters include temperature and salinity (SeaBird SBE49), dissolved oxygen (SeaBird SBE43), chlorophyll and CDOM fluorescence and optical particle backscattering (at 470, 532 and 700 nm) (two WET Labs EcoBB2FLs), total hyperspectral attenuation and absorption (WET Labs AC-S), upwelling radiance at nadir and downward irradiance (hyperspectral; Satlantic HyperOCR series). Data were first collected in October and November 2017, with 0-50m profiles at dawn, midday and dusk. Additional data started to be collected from mid February 2018, with only one profile at 11am each day. Water optical properties are as expected for an oligo- to mesotrophic environment, where surface chlorophyll concentrations are minimum in summer (November) of about  $0.1 \text{ mg m}^{-3}$ , and increase up to about  $0.5 \text{ mg m}^{-3}$  when fall begins in April. Higher concentrations, up to about  $1 \text{ mg m}^{-3}$  are observed at depths around 30-40m. Preliminary results indicate that bio-optical relationships would conform to average models. Reflectance matchups show some underestimation of the reflectance in the blue by the Sentinel3A/OLCI sensor.

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