

Calibration Report: Tara Mediterranean HyperPro (surface mode)

Name: Satlantic Free-Falling Optical Profiler (or Profiler II) deployed with two HyperOCR optical sensors.

Model and S/N for each:

MPR SN 136

HO�R IC SA SN 370

HO�R R08W SN 302

Purchase by Laboratoire d'Océanographie de Villefranche (LOV): December 2009

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"Tara_Med_HyperPro_Calibration_Report.pdf"

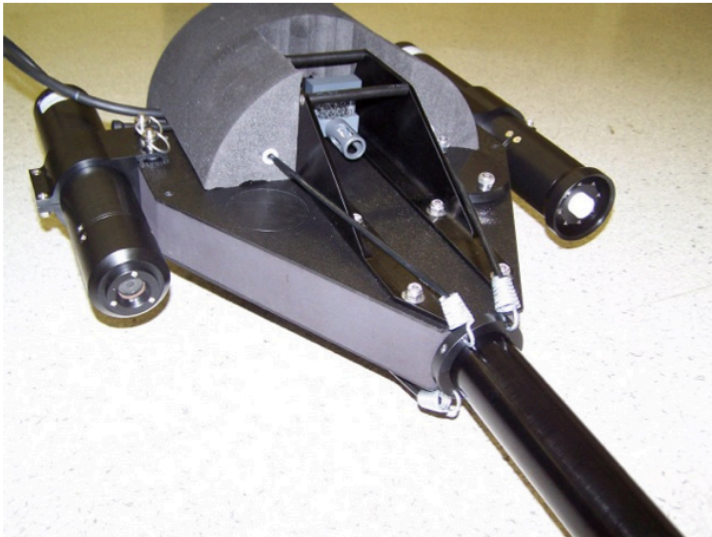


Figure D-6: Float installation for Profiler II Surface Mode

Figure 1. Image of the HyperPro in surface mode (on its side), from the Satlantic user manual:

<http://satlantic.com/sites/default/files/documents/ProfilerII-RevK-Manual.pdf>

I) Introduction

The HyperPro is designed to be a free-falling instrument used to measure both downwelling irradiance and upwelling radiance. It can also be used in "surface mode", where a float is attached that holds the profiler at the surface, allowing for measurement of upwelling radiance beneath the water, and downwelling irradiance just above the water. Data from a surface mode deployment are reported here, and used to calculate remote-sensing reflectance.

II) Calibration/Maintenance

Calibration files generated from the manufacturer calibrations are provided by Satlantic, and are subsequently used in data processing. No user calibration is performed. Pre-calibration and post-calibration was conducted at the manufacturer; post-calibration files are used in data processing.

III) Deployment/Sample Collection

Data were collected in the field during the Tara Mediterranean cruise (June – September 2014; Fig. 2). Data were collected during sunny or mostly sunny periods, and usually deployments lasted ~5 minutes. Often, multiple deployments in one day (and often close in time) were conducted.

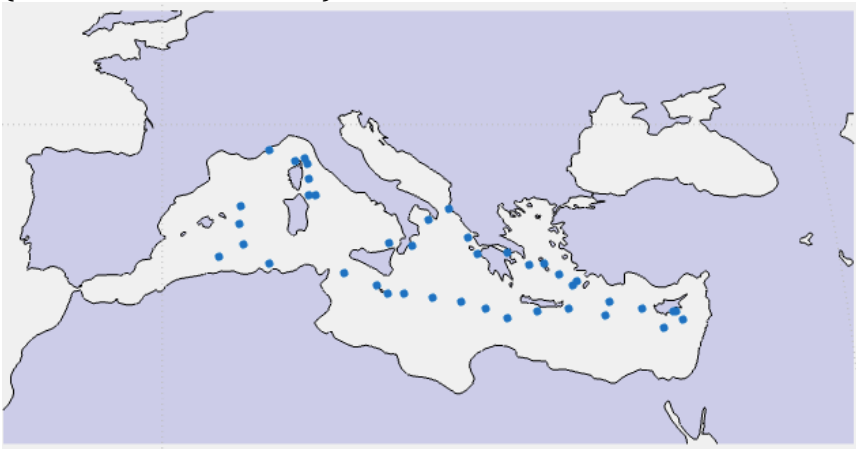


Figure 2. Locations of HyperPro sampling in the Mediterranean Sea during the Tara Mediterranean expedition.

The HyperPro was deployed in surface mode, thus the Lu sensor is 0.20 meters below the surface, and a downwelling surface irradiance (E_s) sensor is used in air just above the surface to measure downwelling irradiance. The instrument is tethered by a power cord and held by the operator during deployment, allowing the HyperPro to drift away from the boat to avoid influence of the ship's shadow.

IV) Data Processing

Data processing and calculation of remote-sensing reflectance (R_{rs}) are described in detail in the document "Tara_Med_HyperPro_Data_Processing.pdf".