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IOPs Continuous Measurements for Ocean Monitoring and Calibration and Validation of Satellite Data

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This work describes the continuous sampling system that has been recently put in place for the acquisition of Inherent Optical Properties (IOPs) data during the 2017 Sentinel-3 validation cruise, in the Mediterranean Sea. Absorption (a), back scattering (bb) and attenuation (c) coefficients were measured on deck with high frequency sampling strategy. Associated with the on-deck measurements and for calibration purposes, the same IOP package was used to perform measurements in cast mode. The absorption and attenuation coefficients were measured via a WETLabs ACs meter, and bb with a WETLabs ECO-VSF3. The major challenge of the system was to design and build a flow-through housing accounting for the sensing geometry of the ECO-VSF3, i.e. three sensor heads each of which measuring the VSF at three angles. Preliminary results show that there is a good agreement between the on-deck and cast mode measurements highlighting the potential for increasing the density of the surface observations. A solid, continuous recording strategy of IOPs may expand the standard surface weather observations performed by the voluntary observing ship program (VOS), thus opening new frontiers of OC in-situ research as well as Cal/Val activity.