



*Consiglio Nazionale delle Ricerche*

ISMAR - Istituto di Scienze Marine

Sede Secondaria di Roma

Via Fosso del Cavaliere 100

00133 Roma, Italy

Tel +39 06 45488634 Fax +39 06 45488291

[direzione@ismar.cnr.it](mailto:direzione@ismar.cnr.it)

C.F. 80054330586 - P.IVA 02118311006



## Seminar

**Emanuele Organelli**

**Research Scientist**

**CNR-ISMAR**

**11:30 27 Feb 2020 - Aula IB09**

### Title

**On the role of marine optics for observing ecosystems and biogeochemical cycles**

### Abstract

High spatial and temporal observations of marine ecosystems and biogeochemical cycles are critical to improve understanding and quantification of the biological carbon pump that, ultimately, controls carbon fluxes from the atmosphere to the deep ocean. To achieve this understanding, marine optical measurements are crucial. Indeed, marine optical properties can be measured with the adequate frequency from space as well as in situ by miniaturized instruments installed on autonomous robotic platforms (e.g., mooring buoys and Biogeochemical-Argo floats). During the seminar, different applications of how marine optical measurements can be exploited for ecosystem and biogeochemical studies will be presented, both at the global and regional (i.e., Mediterranean Sea, subtropical gyres) scales. Examples are selected to highlight advantages/disadvantages of the various observational platforms. The first application will address the exploitation of hyperspectral light absorption measurements to infer phytoplankton diversity. In the second example, the sources of the particulate optical backscattering from which organic carbon fluxes can be inferred will be disclosed. The third part will focus on the dynamics of colored dissolved organic matter and its impact on space-based observations. Finally, a case-study based on Biogeochemical-Argo float observations will be presented to highlight the potential of this emerging tool for unveiling new biogeochemical processes and improving current understanding of marine ecosystems.

Venezia  
Arsenale - Tesa 104 - Castello 2737/f  
30122 VENEZIA  
Tel +39 041 2407927  
Fax +39 041 2407930  
[direzione@ismar.cnr.it](mailto:direzione@ismar.cnr.it)

Lerici  
Forte Santa Teresa  
19032 SP  
Tel +39 0187 978300  
Fax +39 0187 970585  
[segreteria@sp.ismar.cnr.it](mailto:segreteria@sp.ismar.cnr.it)

Napoli  
Calata Porta di Massa,  
80133 NA  
Tel +39 081 5423846  
Fax +39 081 5423887  
[segreteria@na.ismar.cnr.it](mailto:segreteria@na.ismar.cnr.it)

Bologna  
Via P. Gobetti, 101  
40129 BO  
Tel +39 051 6398891  
Fax +39 051 6398939  
[segreteria@bo.ismar.cnr.it](mailto:segreteria@bo.ismar.cnr.it)

Trieste  
Area Science Park  
SS 14, Km 163,5 Ed. Q2  
34149 Basovizza TS  
Tel +39 040 3756871 -2  
[segreteria@ts.ismar.cnr.it](mailto:segreteria@ts.ismar.cnr.it)