



Workshop on shallow water and floating matter remote sensing

Date: 20-21 September 2022,

Venue: CNR, Via Corti 12, Milan, Italy

Scope

The Water-ForCE project will develop a Roadmap for future Copernicus water services. The Roadmap, among other things, will include recommendations for expanding the Copernicus service portfolio and recommendations for technical characteristics of future Copernicus sensors to enable production of the new products requested by different users. Gap analysis of current Copernicus water quality products showed that there are two broad groups of products not covered by the Copernicus services: shallow water products (benthic habitat maps, bathymetry, etc.) and floating material products (cyanobacteria, plastic or other litter, macroalgae and seagrasses floating on the water surface, etc.).

Objective

The aim of the workshop is to bring together remote sensing specialist with relevant experience to discuss:

- What kind of products are feasible at present in the fields of shallow water and floating material remote sensing?
- What can be done with current Copernicus sensors (Sentinel-2) and contributing missions (Prisma, EnMAP, Planet, etc.)?





- Recommendations for future Copernicus sensors (spectral and spatial resolution, SNR, revisit time, etc.) to enable required products?
- To what extent these products should be part of free Copernicus services and to what extent these should be provided on demand by remote sensing companies?

Recommendations will be included in the project deliverables 2.4 “Future Copernicus higher-level biogeochemical and other new water quality products” and 2.5 “Technical needs for future Sentinels” as well as in the Water-ForCE Roadmap for Copernicus water services.

Agenda

Day 1 Shallow water products

Welcome and practicalities

Claudia Giardino (Italian National Research Council - CNR) 13:00-13:10

Overview of the Water-Force and introduction to the workshop

Tiit Kutser (University of Tartu) 13:10-13:40

ESA activities on shallow water products

Marie-Helene Rio (ESA) 13:40-14:00

EMI experiences in bathymetry and habitat mapping using Sentinel-2 and hyperspectral data

Ele Vahtmäe (University of Tartu) 14:00-14:20



Water-ForCE is a Coordination and Support Action (CSA) that has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004186.

Substrate mapping using optical remote sensing of Italian inland and coastal waters

Claudia Giardino (Italian National Research Council - CNR) 14:20-14:40

Coffee break 14:40-15:00

Experiences and needs in using remote sensing data for coastal applications

Gema Casal (Maynooth University) 15:00-15:20

Automated production of bathymetry and benthic reflectance products from Sentinel-2

John Hedley (Numerical Optics) 15:20-15:40

Review of commercial shallow-water services and interplay with Copernicus

Thomas Heege (EOMAP) 15:40-16:00

Discussion on future perspective of including shallow water products in the Copernicus portfolio

End of the day before 18:00

Day 2 Floating material products

Introduction

Tiit Kutser (UTARTU) 9:30-9:40



Recognizing different types of floating material in remote sensing imagery

Kaire Toming (University of Tartu)

9:40-10:00

Requirements for plastic monitoring MARLISE project outcomes

Els Knaeps (VITO)

10:00-10:20

CNR experiences in using multi-source remotely sensed data for detecting floating matter

Mariano Bresciani (Italian National Research Council - CNR)

10:20-10:40

Detecting floating matter as proxy of marine litter: the case of Copernicus Sentinel-2, lessons learned and perspectives

Manuel Arias Ballesteros (Institut de Ciències del Mar - ICM - CSIC)

10:40-11:00

Latest developments, challenges and opportunities to detect floating marine plastic litter from satellite remote sensing

Victor Martinez Vicente (Plymouth Marine Laboratory) *virtual.*

11:00-11:20

Coffee break

11:20-11:40

Interplay of commercial company service evolution and RND institutions: Example floating matter products

Thomas Heege (EOMAP)

11:40-12:00

Mapping floating matters using Sentinel-2 measurements: A cautious note on spectral interpretations

Chuanmin Hu (University of South Florida) *virtual.*

12:00-12:20





Discussion on future perspective of including floating material products in the Copernicus portfolio

End of the day

before 14:00



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