BRIDGE-BS Black Sea Towards 2050 Webinar Series

Webinar 2: Technologies for Smart Monitoring of Multi-stressors: Readiness and upscaling

11:00 – 13:00 CEST

Online (Registration required)

The ocean, and Black Sea in particular, is a deep basin with a layered complex structure in 3D which cannot be inferred only from remote satellite-based observations. There is a growing need for near real time - 'in situ' gathered data from all depths of the sea. When addressing in situ observations, it is crucial to highlight the importance of intelligent data management and accessibility, facilitated by advanced and innovative methodologies. These efforts are not only relevant for the management of regional seas but also crucial for emerging Digital Twin Ocean integration. it is essential that real time data from these types of novel parameters, from physical sensing to biogeochemical and biodiversity monitoring are also fed to the system in addition to more conventional parameters. These novel in situ data are also needed to improve parametrizations of existing 3D models that are the backbone of DTOs, therefore increasing the predictive power of future forecasting.

In this context, BRIDGE-BS project has been developing smart **in situ smart monitoring systems** that include novel sensor-based detection of essential ocean variables on mobile and fixed platforms. For instance, the project has demonstrated the novel applications of in situ pCO2 and pH, and H2S for the first time in the Black Sea. Additionally, BRIDGE-BS is developing novel e-DNA based biodiversity monitoring methods and advanced jellyfish sensing using acoustic as well as drone-based methods specific for the Black Sea.

2nd Webinar will focus on smart monitoring technologies developed within BRIDGE-BS and how to upscale them. It will feature selected speakers from the project that will demonstrate key lines of progress that have the capacity for future upscaling and acceleration.

Agenda (All times CET)

11:00-11:20 Introduction and Scope: Main lines of progress and elevated technological readiness in BRIDGE-BS technologies / Mustafa Yücel, METU

11:20-12:10 Demonstrator Cases:

- Case 1: Rapid Jellyfish Detection / Kremena Stefanova, IO-BAS
- Case 2: Smart phytoplankton monitoring / Nina Dzhembekova, IO-BAS
- Case 3: High-precision pH sensor application in the Black Sea / Agathe Laes (Ifremer):

12:10-12:30 Pathways for upscaling and acceleration:

Frederick Herpers (SML), Matteo Bocci (SML) and Patrizio Mariani (DTU)

- Q and A session