

**CONSIGLIO NAZIONALE DELLE RICERCHE
ISTITUTO DI SCIENZE MARINE**



CICLO DI SEMINARI

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20/01/2022

Innovative methods based on satellite data for the monitoring and prediction of Harmful Algae Blooms (HABs) in the *Rias Baixas* area (NW Spain)

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Harmful Algae Blooms (HABs) are a frequent phenomenon in the Rias Baixas (NW Spain) that impacts on mussel aquaculture activities. Within CoastObs project, a set of products based on Earth Observation (EO) data has been developed to provide useful information for aquaculture users in the region. These products include a new set of algorithms for the detection and monitoring of *Pseudo-nitzschia* spp. blooms from Sentinel-3 OLCI, prediction models based on recent developments in machine learning methods and an innovative approach combining EO data and Dynamic Energy Budget (DEB) modelling for analysing mussel growth. Products were calibrated and validated using *in situ* data and further evaluated by an association of mussel producers. Results show the potential of EO data to complement the information provided by the existing *in situ* monitoring program.