

Day 2 – Microalgae coastal biofilms

Coastal areas and estuaries are amongst the ecosystems most affected by current sea level increase and by increasing coastal pressures (human and environmental). Estuarine and coastal sediments are already subject to a wide variety of strong natural variations, e.g. tidal rhythms, river floods, extreme temperature variations from low tide to high tide and strong salinity variations. The amplitude of these variations is likely to increase in the current scenario of climate global changes thus adding further pressure to these ecosystems.

Coastal intertidal and shallow water sediments are colonized by a complex mixture of microorganisms that form transient biofilms at the sediment surface during low tide. These microphytobenthos biofilms provide critical functions to the estuarine ecosystem, contributing to the stabilization of sediments, providing an important resource for grazers and contributing up to 50% of estuarine primary production. In the current scenario of global climate changes it is crucial to better understand the role of microphytobenthos biofilms in order to better understand and manage sediment dynamics in coastal ecosystems.

The second day of the summer school will be dedicated to microphytobenthos biofilms. Lectures will cover a wide variety of subjects ranging from: microphytobenthos ecological importance, ecosystem functions, biodiversity, photo-regulation mechanism and remote sensing.

Some of the techniques and methodologies that will be addressed include: sediment sampling for pigment analysis; HPLC pigment analysis; spectral reflectance analysis of natural microphytobenthic biofilms and microalgae cultures; PAM fluorescence; measuring sediment cohesion; sampling for microphytobenthos diversity; preparing permanent microscope slides for diatom identification.

Confirmed speakers:

Prof. Michael Kühl (University of Copenhagen)

Dr. Cedric Hubas (Muséum National d'Histoire Naturelle, BOREA)

Dr. Bruno Jesus (University of Nantes)

Dr. Vona Méléder (University of Nantes)

Dr. Lourenço Ribeiro (University of Lisbon, MARE)