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Orientation: Ocean Observation and Global Change

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Research Area: 1.12 Chemical Oceanography



**PhD project: Elemental and molecular characterization and bioavailability of dissolved organic matter in the Mediterranean Sea**

Supervisors: Dr. Xosé Antón Álvarez Salgado (Marine Research Institute-CSIC)  
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**Summary:**

The chemical composition and bioavailability of dissolved organic matter (DOM) in the dark ocean is still enigmatic. To better understand the role played by DOM in the global ocean carbon cycle, it is crucial to decipher its composition and mechanisms of production and degradation. Knowing how DOM persists for hundreds to thousands years in the ocean is also pivotal. Within this framework, the main purpose of this PhD thesis is to shed light on the elemental and molecular composition of DOM, identify the environmental drivers of DOM variability and gain knowledge about DOM bioavailability.

This PhD thesis is framed in the trans-Mediterranean cruise HOTMIX 2014. The Mediterranean Sea (MedSea) is an oligotrophic semi-enclosed basin suitable to study the DOM dynamics as it comprises water mass formation areas with its own thermohaline circulation. The smaller size and faster ventilation rates of the MedSea compared to the global ocean allow DOM changes to be observed in shorter spatial and temporal scales.

