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Specialization Area: Ocean Observation
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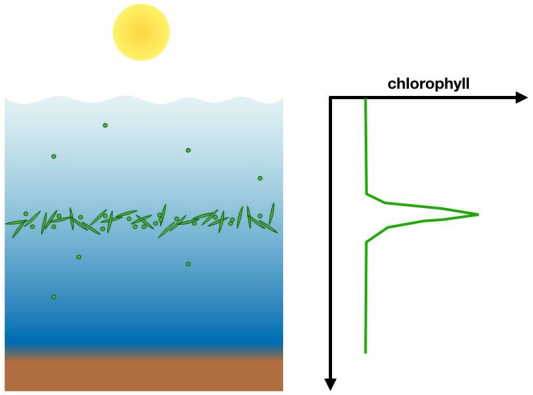

PhD project: **Thin layers of phytoplankton in the Rías Baixas (NW off Iberia): occurrence, formation and relevance**

Supervisors: Dr. Beatriz Mouriño-Carballido (Universidade de Vigo)
Dr. Bieito Fernández Castro (University of Southampton)

Summary: The Galician Rías Baixas are four long, narrow bays located within the Canary Current-Iberian Upwelling System, one of the most productive areas in the global ocean. Upwelling dynamics here are controlled by wind, which varies in a synoptic scale. So, it occurs as a series of transient events lasting in ~3 days.

Phytoplankton blooms intensified by these upwelling events, trigger an elevated primary production which, in turn, sustain one of the most intense fisheries and aquaculture industries in Europe. However, phytoplankton blooms are often formed by toxin-producing species, such as those belonging to the genus *Dinophysis* and *Pseudo-nitzschia,* which are the main responsible of toxic events inside the Rías, thus causing huge economic loses.

These toxin-producing genus are capable to bloom in thin layers of phytoplankton, which are a particular case of blooms that occur in a narrow depth interval and can extend over several km. Their thickness can hinder their detection by toxin monitoring programs, that usually collect integrated water samples.

In this thesis, I am using different datasets from field observations such as the toxin monitoring program, oceanographic cruises, but also modeling, to investigate the characteristics and mechanisms responsible for thin layers of phytoplankton occurrence.