



Framework for improving land boundary conditions in ocean regional products

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Currently hydrological models are not generally coupled to coastal and regional ocean models because, even if regarded as a powerful and useful tool, they do not fully accomplish to estimate accurately the right volume of water reaching the coastal zone for many reasons including water management activities such as human consumption, irrigation, etc. For this reason, many coastal and ocean models continue to use river climatologies as boundary conditions for representing such an active boundary. Furthermore, continuous salinity observations in the coastal area are scarce and sensors are highly unreliable while current Earth Observation (EO) products for salinity poorly represents the coastal gradients.

In this presentation, the current state-of-the-art and development of the LAMBDA Project (λ) (LAnd-Marine Boundary Development and Analysis) will be shown. The main aim of the project is to demonstrate an improvement in the thermohaline circulation in coastal areas by a better characterisation of the land-marine boundary conditions, with special regard to the salinity fields. The LAMBDA project analyses the opportunity of improving the land-marine boundary conditions by exploring the capacities of state-of-the-art hydrologic models. In order to achieve those objectives, the project strategy use an integrated approach that goes from watershed models to validation in the coastal area by fit-for-purpose EO products, developed by SMOS, and passing through methods and proxies for integrating the freshwater flows into regional mesoscale grids.

The project products will be evaluated in Portugal Continental waters, tested in two CMEMS regional products (the Iberian Biscay Irish (IBI) and the European North West Shelf (NWS) Monitoring Forecasting Centres) and evaluated by local experts in Germany, Ireland, Portugal, UK and Spain.