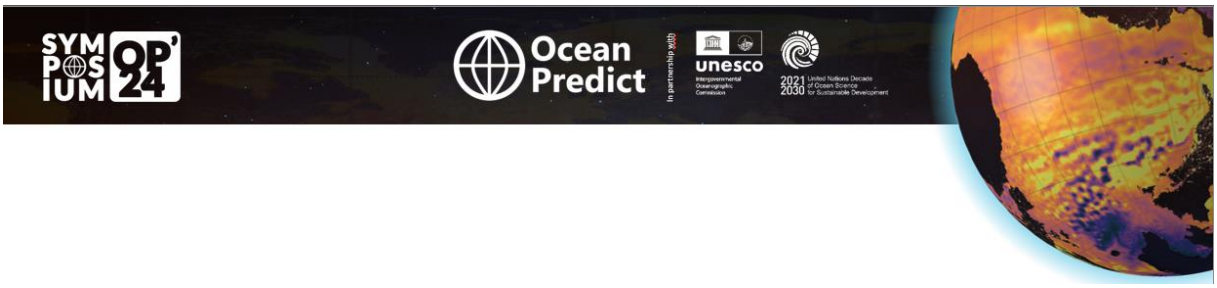
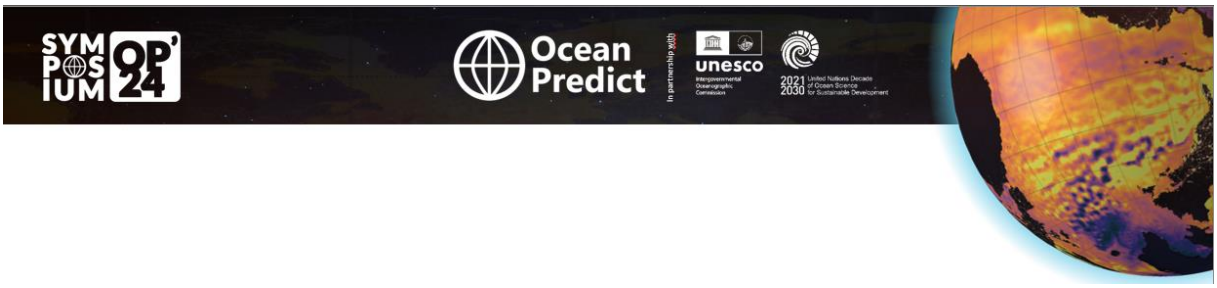


IBI: A high-resolution regional ocean prediction system of the Copernicus Marine Service targeting the coastal users over the North-East Atlantic.

Europe's Earth Observation Program, Copernicus, monitors our planet and its environment, for the ultimate benefit of society. The Program is funded, coordinated and managed by the European Commission and is driven by policies, to support them, and by requirements from users, including coastal managers. The marine part of Copernicus considers the global ocean with a focus on the European seas and provides in its Marine Data Store (MDS), observation data (from the Thematic Assembly Centers: TACs) as well as model simulation data: (from the Monitoring and Forecasting Centers: MFCs). In particular, over the Iberia-Biscay-Ireland area, IBI-MFC disseminates multi-year reanalysis (IBI-MY) in the past, and near-real-time analyses and forecasts (IBI-NRT) by taking into account physics, waves and biogeochemistry components of the ocean. IBI products are used in the innovative Service Evolution and Coastal Hub Copernicus programs in order to answer to the coastal users at best and drive new added value downstream services. IBI physics and biogeochemistry models are fully online coupled and a wave-ocean coupling is planned for the next upgrades. An offline coupling with the European Flood Awareness System (EFAS) through the use of its river discharge data strengthens the link with the coastal community as well as the connection with the different Copernicus services such as Emergency Management and Climate Services. Multi-year and near-real-time data converge to the same 1/36° horizontal resolution (2-3 km). IBI systems are embedded in the Copernicus Global ones and ensure the regional transition with the open ocean to improve coastal downstream applications. Wave systems assimilate altimetric significant wave height and wave spectra. Physics systems assimilate altimetric sea level anomaly, in situ temperature and salinity vertical profiles and satellite sea surface temperature. IBI systems are assessed by comparing to the observation data at different time scales: in a multi-decadal period for IBI-MY systems, in a typical one-year period to validate the preliminary calibration run for IBI-NRT systems before the transfer into operation, and in a daily frequency to assess analysis and forecasts produced and disseminated every day. The new versions of IBI systems are also compared to the previous ones to show the improvements of the upgrades and an intercomparison with the global systems can be performed too in order to highlight the benefit of the high-resolution regional systems. The description of the IBI



systems' configurations, their assessment, as well as some examples of use cases for coastal applications will be presented.

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