

COAST-HF - A fixed-platform networks along French coasts

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COAST-HF is a French national observation network of the physical and biogeochemical dynamics of the coastal ocean, at high frequency. COAST-HF aims at understanding and analysing changes of contrasted coastal ecosystems at different temporal scales from extreme or intermittent high frequency (hour, day) events to multi-year trends.

Since several years (from 2000 for the longest time series in Bay of Brest), the network extends along the English Channel, Atlantic and Mediterranean French coasts through 14 fixed platforms instrumented for the *in situ* high-frequency ($\leq 1h$) observations. The organization of continuous multi-site *in situ* observations in a unique network of coastal observing platforms aims at operating an optimal system to pool efforts and initiatives (e.g. human resources for data management), to converge on best practices, and to support common measurement standards. On this basis, key scientific questions can be addressed such as eutrophication processes and effects on dissolved oxygen concentration and phytoplankton dynamics (i.e. *in vivo* fluorescence), or the influence of main river plumes on sediment dynamics.

This coastal *in situ* observing network contributes for sustained high frequency and long-term observations in coastal environment based on Essential Ocean Variables. Ongoing technological and methodological developments are investigating the continuous observation of chemical (e.g. pCO₂, pH) and biological features (e.g. phytoplankton diversity, primary production) that are being implemented in some of these platforms. COAST-HF is part of a national infrastructure (ILICO) and of the European Research Infrastructure project JERICO-RI. All those observations are connected to national, regional and European networks and initiatives as the EuroGOOS Regional Operational Oceanographic Systems.