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COASTNET: Integrating Earth Observation and in-situ data for coastal management

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Abstract

The **Portuguese Coastal Monitoring Network** (CoastNet) is a research infrastructure (RI) included in the **Portuguese Roadmap of Research Infrastructures**, designed to improve the understanding of **Portuguese coastal ecosystems' functioning** through the development of a remote coastal monitoring system. CoastNet aims at monitoring important coastal ecosystems of the Portuguese coast, through relevant chemical, physical and biological parameters, collected remotely in near real-time. This monitoring network is implemented through: 1) the development of an historical and near real-time satellite data centre; 2) the deployment of a set of sensors, to collect environmental and biological *in-situ* data, at three estuaries (Mondego, Tagus and Mira), which are almost immediately transmitted to our data centre; (3) acoustic receivers arrays deployed to track aquatic fauna movements; and 4) the compilation of an historical *in-situ* dataset of biological and environmental parameters. CoastNet provides a better understanding of the functioning of Portuguese coastal systems through the analysis of their temporal and spatial variability. Gathering such scientific knowledge is expected to improve scientific production, promote socio-economic activities, such as fishing and aquaculture, as well as the conservation of endangered species. A variety of services will also be provided to a wide range of stakeholders. Additionally, the **Portuguese Coastal Monitoring Network** provides full and free access to the collected data sets to the scientific community, public administration and private companies, through the dedicated **Geoportal**, available at: <http://geoportal.coastnet.pt>. A case study based on the Tagus estuary, covering the water continuum from the coastal zone to the inner parts of the estuary, will be presented.