# The module for ocean observatory data analysis of EMSO

The EMSO observatory node

The EMSO observatory node

The Module for Ocean Observatory Data Analysis (MOODA) and the oceanobs Python library

oceanoobs is a Python package for analyzing data from marine observatories. This work is performed in the framework of the EMSODEV. The package accepts data coming from international Ocean Observatories, such as OBSEA, EMODnet, JERICO and EMSO. oceanobs consist of a set of libraries. Libraries are classified into tree types:

- **Analysis libraries**: Libraries that contains a set of functions and classes for processing and analyzing data.
- **Data access libraries**: Libraries that contains a set of classes for retrieving data from a particular marine observatory. The subclasses inherit from classes from analysis libraries, and their functions consist of translating the particular observatory data to the standard oceanobs data format.
- **Graphical User Interface (GUI)** libraries: Libraries that contains a set of classes and functions to create and use a GUI called MOODA. MOODA helps you to open and analyze data, but you can do everything also with Python code.

Source code available in [GitHub](https://github.com/EMSODEV/oceanobs)

More information and code examples in [Read the Docs](http://oceanoobs.readthedocs.io/)

Thanks to funding provided by H-2020 project [EMSODEV](No 676555) and to our colleges Daniel M. Toma, Joanquin del Rio, Javier Cadenas, Iram Byehil, Enoch Martinez and Marc Nagueras from the UPC – SARTI, Spain for their good work in the EMSODEV project.

---

**What is EMSO?**

The European Multidisciplinary Seafloor and water-column Observatory (EMSO) is a large-scale, distributed, Marine Research Infrastructure (RI) on a European scale, consisting of ocean observatory systems for long-term, high-resolution, (near) real-time monitoring of environmental processes including natural hazards, climate change, and marine ecosystems. EMSO observatory nodes are at key sites around Europe, from the Arctic to the Atlantic, through the Mediterranean, to the Black Sea. To analyze the EMSO data, we develop the Module for Ocean Observatory Data Analysis (MOODA). MOODA is a software with a Graphical User Interface (GUI) developed for scientists. The software helps to facilitate data access to the data generated from a specific query, including event annotations.

**What is EMSODEV?**

The EMSODEV’s (EMSO implementation and operation: DEvelopment of Instrument module) general objective is to catalyse the full implementation and operation of the EMSO distributed Research Infrastructure (RI), through the development, testing and deployment of an EMSO Generic Instrument Module (EGIM). This module will ensure accurate, consistent, comparable, regional scale, long-term measurements of ocean parameters, which are key to addressing urgent societal and scientific challenges such as climate change, ocean ecosystem disturbance, and marine hazards. This will result in the increased interoperability of EMSO nodes thanks to the harmonized collection of ocean essential variable time series. In addition, EGIM will also greatly help optimize the investments and operational efficiency of the EMSO research infrastructure thus improving RI effectiveness and its attractiveness for member states and users, including for industry.