

Potential use of satellite data to infer the the circulation dynamics in a marginal area of the Mediterranean Sea.

What follows is the abstract of the undermentioned paper.
When the final paper will be ready, we well send a copy
in HTML or Wimmword format, following your recommendations.

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ABSTRACT

Remote sensing is now widely used for scientific studies, but much work has still to be done before assuming the technique operative to routinely monitor the state of the sea.

>From an environmental point of view, a lot of additional information about circulation and its dynamics is required in marine areas, in close of which a large part of human population resides, to better understand the state of pollution. It is known that some characteristics of the circulation (e.g meanders, eddies and filaments) could constitute the mean to dispers pollutants from coastal areas to deep seas, but in the same time many phenomena (e.g. dense water formation, water exchanges through straits, etc.) give rise to so complicate dynamics that even in situ data alone are difficult to interpret.

Measurements of sea level and sea surface temperature gathered respectively by altimeters on board ERS-1 and Topex/Poseidon satellites and AVHRR and ATSR infrared sensors on board NOAA and ERS-1 satellites, are available with unprecedented accuracy and relatively good spatial and temporal coverage. Recent updating in analysis methodologies (e.g. Empirical Orthogonal Decomposition for SST fields) has proved to be powerful to infer the main surface and deeper dynamics of the sea.

Our approach consists in critically presenting the results of in situ analysis and then show how these results are represented in the previous satellite data.

For the investigation, we choose a marginal area of the Western Mediterranean Sea, where a series of in situ measurement campaigns (CTD transects and current meter moorings) have been carried out in the latter ten years. In our definition this area consists of two different basins: the Northern part of the Tyrrhenian Sea and the Ligurian Sea interacting through the narrow Strait of Corsica.

The aim of the presentation will be to interpret the dynamical aspects involving the water mass exchanges between the two basins after a comparison of the results from different sources of data.