

## **CIESM Congress Session : Open ocean processes**

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### *Moderator's Synthesis*

The complex multi-scale dynamics of the Mediterranean Sea makes it a challenging task to provide sufficient in-situ observations that will further our understanding of the physical processes and enable predictions of the short and long-term behavior. Multi-disciplinary and multi-scale sampling in the Mediterranean basins should be guided by the synthesis of existing knowledge combined with theoretical considerations in order to avoid incomplete sampling so as to close knowledge gaps in time and space. The observation strategies should make use of the present technological progress and increase cross-basin coordination of experiments for systematic exploration. In recent decades, research in the Mediterranean did yield advanced knowledge of deep water formation processes, the hydrographic property changes and the eddy component of the circulation.

The communications covered a variety of physical and biogeochemical processes in the deep basins of the Mediterranean, including new results on:

- Observations of mesoscale eddies from SMOS data
- Climatologies of eddies in the Mediterranean
- Convection studies in the Gulf of Lions
- Progress made in installing an integrated marine monitoring system
- Glider missions in the Adriatic
- Quantification of eddies from altimetry including centrifugal accelerations
- Salinity measurements based on SMOS data
- Monitoring of the circulation in the Levantine Basin

The general debate which followed the presentations highlighted the fact that the observational data base in the Mediterranean is still sparse and often limited by the length of available time series and/or the spatial coverage. It was suggested to intensify the comparison to model output to help the analysis of the observational data, to identify key processes and areas where additional data would be needed. The discussion also highlighted that a model inter-comparison study and a thorough validation of models based on robust indices derived from data would be of much interest.

