# Editorial

The water mass structure in the Mediterranean Sea is the result of several atmosphere-ocean interaction processes acting on the surface water that is continuously entering this semi-enclosed basin through the strait of Gibraltar. These seasonal processes act at temporal and spatial scales that are much smaller than those in the open ocean, and are conditioned and triggered by the Mediterranean weather. Many researchers have investigated the identification, characterization and origin of the Mediterranean water masses, which display high variability due to the very high variability of the geographic, topographic and meteorological conditions in the region. Only quite recently, in 2001, an agreement sponsored by the International Commission for the Scientific Exploration of the Mediterranean Sea (CIESM) was reached within the oceanographic community to unify the catalogue of water masses and to consolidate the rules for their naming.

The Levantine Intermediate Water (LIW) is one of the Mediterranean water masses that has been well identified for many decades, as it is the saltiest and one of the warmest. Its distribution, and hence its circulation from its formation area in the eastern Mediterranean, has traditionally been traced at subsurface levels thanks to these extreme characteristics. The core method depicted a smooth degradation of the extreme LIW values from east to west and therefore presented the image of an intermediate water vein flowing towards Gibraltar as a countercurrent along the African coast below the incoming surface Atlantic Water. Some 25 years ago, Claude Millot examined the available infrared satellite imagery and re-interpreted the in situ measurements taken at quite broad spatial scales. He highlighted the fundamental importance of the mesoscale in the Mediterranean circulation and presented a new scheme for LIW motion as a vein flowing cyclonically within each subbasin.

In this issue of *Scientia Marina* we feature the paper "The LIW characteristics: an astounding general misunderstanding!", in which Claude Millot presents a critical review of some well-established concepts concerning the identification of the LIW in the different regions, especially the quantification of the thickness of the LIW intermediate layer through the location of a relative temperature maximum and an absolute salinity maximum below it. Some inconsistencies found in the volumes of LIW that should be involved in the formation of other Mediterranean dense waters and better current knowledge of other intermediate Mediterranean waters that are also involved, lead Millot to re-examine earlier studies and formulate a simple numerical model for simulating the evolution of an intermediate water layer mixing with other water masses above and below. His conclusions that the location of the two maxima should be decoupled from the presence of LIW itself and that previous estimations of LIW volumes involved in several Mediterranean water mass processes should be reconsidered make this paper a highly stimulating and even controversial one, as occurs in many of Millot's contributions. In the same issue we recommend to the readers the book review by M. Alcaraz of the book entitled:."The biology and ecology of tintinnid ciliates. Models for marine plankton", Enjoy.

Editorial Board