

ZOOPLANKTON COMMUNITY STRUCTURE AND SIZE DISTRIBUTION IN THE SOUTHERN TYRRHENIAN SEA DURING THE 2005 CIESM SUB 1 AND SUB 2 CRUISES

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Abstract

The mesozooplankton (>200 μm) abundances and biomass spectra and diversity were studied in the southern Tyrrhenian Sea using an image analysis system during two oceanographic cruises. Preliminary results show a clear seasonal cycle of both abundance and biomass structure of the zooplankton community. These are compared to changes in zooplankton biodiversity and environmental conditions.

Keywords : *Zooplankton, Tyrrhenian Sea, Copepoda, Circulation.*

In the framework of the CIESM Zooplankton Indicators program and of the collaboration among the MedZoo group members (<http://www.obs-vlfr.fr/LOV/ZooPart/MedZoo/>), zooplankton spatial distribution was investigated in the southern Tyrrhenian Sea. Eleven stations were visited in July 2005 (cruise SUB 1) and 17 stations in December 2005 (cruise SUB 2). For each station, two replicated samples were collected with a WP2 net by vertical tows in the layers 0-70 m and 0-200 m (figure 1).

50000 individuals measured). The aim was to monitor the spatial distribution of the size spectra of the main zooplankton taxa in the southern Tyrrhenian sea, a region that has been seldom studied since the work of 3. Initial results of copepod distributions have shown that both, abundance and size spectra varied within each campaign and were related to the hydrological conditions. Differences were also observed between the two sampling periods. Copepods were more abundant and of a smaller mean size in July than in December. The results indicate that copepods were more abundant in anticyclonic than in cyclonic eddies during both cruises. The higher concentrations in the anticyclonic eddy during SUB 1 can be explained by the retention of organisms in the eddy and/or by the higher phytoplankton resources available for the copepods. Data are still under analysis and will be presented more in details during the congress.

References

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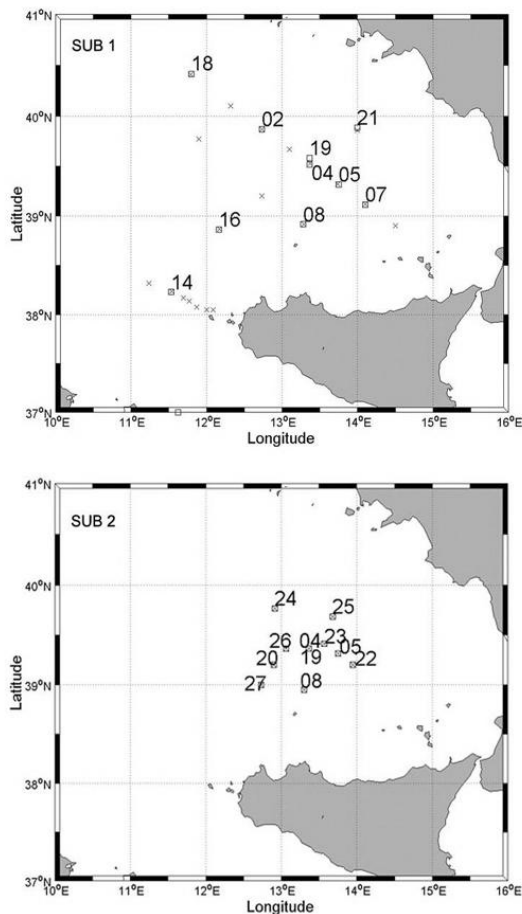


Fig. 1. Net sampling stations (square) and CTD stations (cross) during SUB 1 (top) and SUB 2 (bottom).

Samples were analysed using the Zooscan imaging system [1]. This tool enables a fast and reliable enumeration and measurement of zooplankters in preserved net samples. A learning algorithm allows the recognition of some groups as it learns from a training set of different taxa images. In our study, slopes of the biomass spectra [2] are calculated for the mesozooplankton community and for selected groups such as copepods (450 to 1550 μm in Equivalent Spherical Diameter) on 50 samples (more than