INVASION OF POMO PITS (MIDDLE ADRIATIC SEA) BY A COLD WATER MASS DURING SPRING 1993

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In the framework of the C.N.R. project "Study of the dynamical process and circulation of the Italian Seas" (PASCHINI *et al.*, 1993), two cruises were carried out in the Middle Adriatic Sea (fig. 1) from 10 May to 7 June 1993 (Spring period). In the first cruise, an area of 42 x 36 nautical miles were covered in about 2.5 days, with 149 stations every 2 miles, alternatively with 77 CTD casts and 74 XBT launches, distributed on 7 transects. In the second cruise, in about 3 days the same area of the first cruise with one more transect to the South was covered with 87 CTD casts and 99 XBT launches.

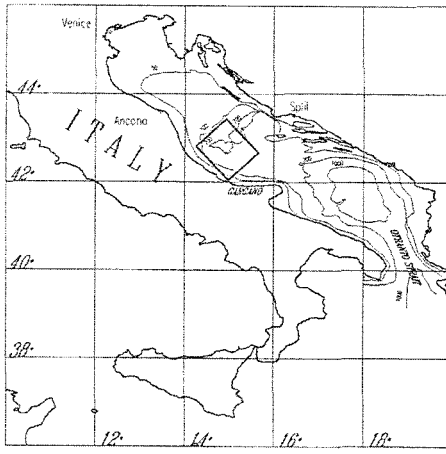

Fig. 1. Area of investigation.

A Sea Bird SBE 9/11 CTD (Conductivity, Temperature and Depth) coupled with twelve bottles GO Rosette sampler were used. The CTD was outfitted with additional sensors measuring oxygen, fluorescence and height above the bottom. In every CTD stations samples were taken at different depths for the oxygen content determination with the Winkler method; every two CTD stations water samples were taken at different depths also for the nutrients (nitrite, nitrate, phosphate and silicate) determination. In this communication only the data collected with the CTD casts are examined.

An evident evolution was registered in almost all the parameters going from the first to second cruise. The surface layer is warmer and much more less saline in the second cruise with a more pronounced thermocline; at the contrary the bottom layer of the Pomo Pit is colder than in the first survey.

In the second cruise, at around 50 m depth, is present a well pronounced salinity maximum (S > 38.6 PSU) characteristic of the MLIW (Modified Intermediate Levantine Water) (ARTEGIANI *et al.*,1994). The average fluorescence maximum depth is about the same (60 m) during the two surveys, but the maximum values, in the second cruise, is about the double than in the first one.

The dense and cold North Adriatic bottom water, still evident along Italian continental shelf in the first cruise, occupied, during the second cruise, the Pomo depression from the South side, following the isobath of about 150 m with a cyclonic path. This is particularly evident from figures 2a and 2b showing the bottom (only 2-4 meters from the sea bottom) temperature distribution during the two cruises.

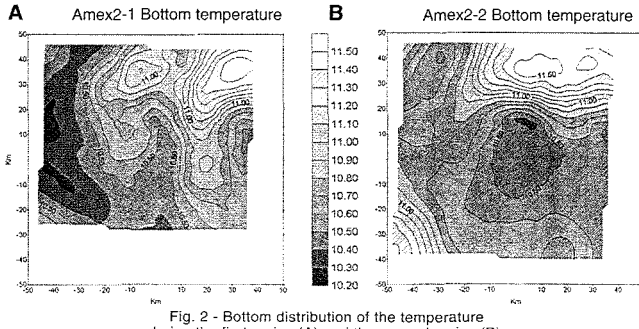

Fig. 2 - Bottom distribution of the temperature during the first cruise (A) and the second cruise (B).

REFERENCES

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