FLUXES IN THE BALEARIC CHANNELS

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Superficial and intermediate water fluxes, through the Balearic channels, have been calculated and studied, in order to contribute to the knowledge of the water masses circulation and mesoscale variability, in two consecutive Mediterranean sub-basins.

A data set from three cruises carried out, in the Balearic channels, during March, May and June 1993, were used to calculate these fluxes. Table I shows preliminary net results.

Superficial northward fluxes close to 0.5 Sv, point out the importance of Modified Atlantic Water (MAW) input in this area. The values imply that under certain circunstances, an important percentage of the MAW output from the Alboràn sea, reach the Balearic Islands, possibly transported by processes adsociated with the Almerian-Oran front instability or by mesoscale processes associated with the Argelian Current.

In the same way, Levantine Intermediate Water fluxes (LIW) show seasonal features in relation with the Ligur-Provenzal-Catalan current and the Winter Intermediate Waters are shown to be seasonal.

This flux data set when compared to historical data, shows a high interanual variability.

	IBIZA CHANNEL			MALLORCA CHANNEL		
	N	S	NET	N	S	NET
MARCH 93	+0.366	-0.808	-0.442	+0.907	-0.432	+0.475
MAY 93	+0.946	-0.690	+0.256	+0.607	-0.225	+0.382
JUNE 93	+0.532	-0.575	-0.043	+0.543	-0.143	+0.400

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POTENTIAL ENERGY ANOMALY AND HEAT DISTRIBUTION IN THE GULF OF TRIESTE (NORTHERN ADRIATIC) DURING THE SPRING-AUTUMN PERIOD

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The distribution of Potential Energy Anomaly -PEA- (ELLIOT and CLARKE, 1991) and heat content of the Gulf of Trieste were deduced from the thermohaline structure recorded in the frame of the Alpe Adria project from 1991 to 1993.

In the northern shallower part of the Gulf of Trieste, where the depths are less than 10 m, the PEA reaches higher values than those in the southern part of the gulf due to the spring and autumn pronounced riverine outflows. During the spring-autumn period the only efficient agent for mixing the water column is the wind. Estimations of mixed areas are obtained from charts of PEA distribution calculated at several depths and from wind data. In periods of low wind intensity the energy supplied by wind may not be sufficient to mix thesurface part of the water column.

In periods of pronounced peaks of riverine discharge the surface part of the water column is almost in geostrophic equilibrium and other nonlinear terms together with the term of local acceleration in the equation of motion may contribute up to 10% of Coriolis term. Therefore, the first approximation of water transport based on a stationary geostrophic equilibrium sounds reasonable. The procedure for the calculation of the barotropic and baroclinic components of volume transport is developed. The barotropic component depends on the horizontal gradient of vertically averaged density, while the baroclinic component is proportional to the gradient of PEA. The relation between the PEA and the JEBAR term (MERTZ and WRIGHT, 1992), which plays a role in a depth-averaged vorticity equation, is also analyzed.

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