DISTRIBUTION OF SUSPENDED MATTER IN THE NORTH ADRIATIC SEA

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ABSTRACT: *Suspended matter distribution, during MEDALPEX, was analysed in relation to hydrographic conditions. Suspended matter showed tendency to concentrate in the frontal zone. Greater concentrations were found in May than in March.*

Résumé : Au cours de l'expérience MEDALPEX, en Adriatique septentrionale, on a analysé le rapport existant entre la matière en suspension et les conditions hydrologiques. On a pu observer une plus forte concentration de la matière en suspension dans la zone frontale. La concentration trouvée en mai est supérieure à celle trouvée en mars.

The extinction of red light was measured with an in-situ turbidity meter, every five meters vertically in the North Adriatic (Fig. 1.). Measurements were carried out during the MEDALPEX experiment in March and May 1982.

Differences in extinction coefficients of red light, are in the first approximation a measure of differences in suspended matter content (of particle size more than 1μm (Joseph, 1955)). Relative extinction coefficient is given by:

$$\Delta c_i = \ln (I_{max}/I_i)/l$$

(I_{max} is the highest transmittance, I_i is the transmittance at the position while l is the path length through the water).

Relative extinction coefficients were calculated taking the highest transmittance at the station 5 in March as I_{max}. Data frequencies are not normaly distributed and medians with quartiles present the distributions more suitably than the means and standard deviations (Figs. 2 & 3.)

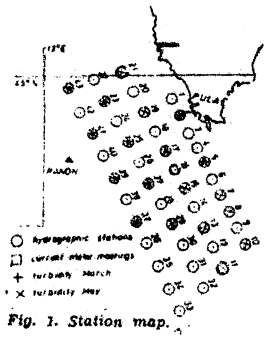

Fig. 1. Station map.

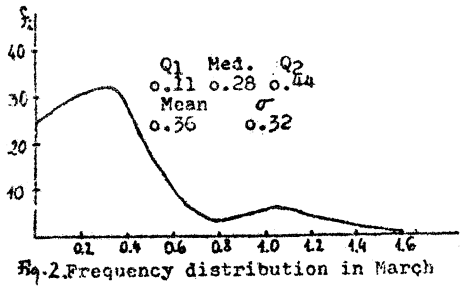

Fig. 2. Frequency distribution in March

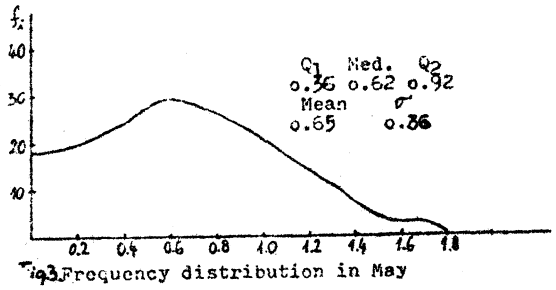

Fig. 3. Frequency distribution in May

Most Stations in March showed homogenous distributions (Figs.4.-6) from the surface to the bottom, so that $\Delta c_i \leq$ (one class interval), while unhomogenous distributions in March are usually the most turbid ones. Larger extinction coefficients were found North of the observed frontal zone in the temperature salinity field (Zore-Armanda et al. 1983), and larger extinction coefficients were found in May than in March (Tab. 1.).

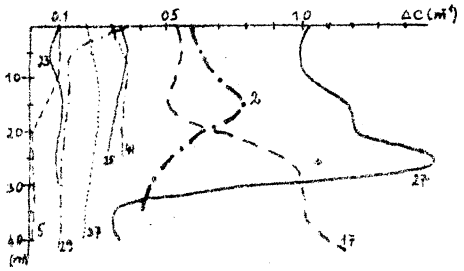

Fig. 4. Extinction in March

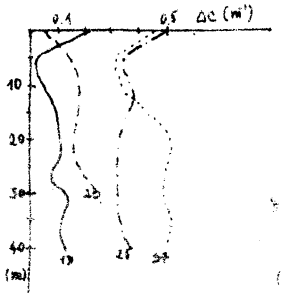

Fig. 5. Extinction in May

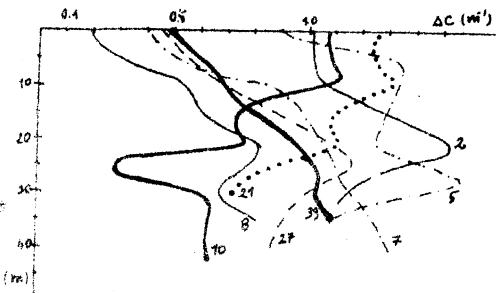

Fig. 6. Extinction in May

		(north)	(south)
	(N=91)	(N=53)	(N=38)
March	0.36	0.42	0.34
	(N=139)	(N=76)	(N=63)
May	0.65	0.73	0.54

Tab. 1. Mean extinction coefficients (m^{-1}).

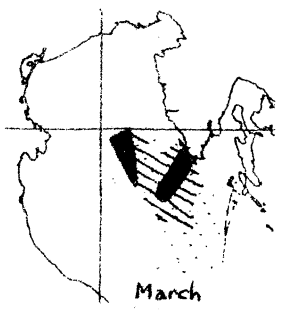

Fig. 7. Mean extinction
$\Delta c > 0.5$
$\Delta c < 0.5$

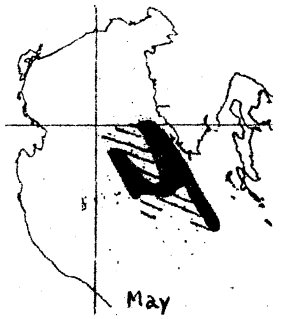

Fig. 8. Mean extinction

Greater vertical homogeneity was found at stations in March due to vertical mixing while nonhomogeneity in May is caused by stratification.

Larger extinction coefficients in May than in March must be caused by stronger influence (rainfall and the river inflow) from both coasts in the spring.

It could be recognized that the stronger influence had come from the Istrian coast in both cruices (Figs.7.& 8.), but the influence of river Po is observed at the nort-west of the investigated area.

REFERENCES:

J o s e p h, J., 1955. Extinction measurements to indicate distribution and transport of water measses. Proc. UNESCO. Symp. Phys. Oceanogr., Tokyo, 1955, pp. 59-75.

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