

CONCENTRATIONS OF Zn, Pb, Cd AND Cu IN THE SURFACE WATERS OF THE
ADRIATIC SEA (1980 CRUISE OF THE R/V "ANDRIJA MOHOROVIČIĆ")

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Summary. From the analysis of the surface waters at 40 stations of the Adriatic Sea by a "clean" sampling procedure using DPASV with TMFE, the average concentrations of Zn, Cd, Pb and Cu as "ionic" 1800, 4, 47, 90 and as "total" 3700, 7, 71, 240 ng dm⁻³, are reported.

Résumé. Les concentrations moyennes en Zn, Cd, Pb et Cu "ioniques" étant 1800, 4, 47, 90 et du Zn, Cd, Pb et Cu "totaux" étant 3700, 7, 71, 240 ng dm⁻³, sont rapportées en analysant l'eau de surface en 40 stations de l'Adriatique au moyen du procédé d'échantillonnage "pur" en utilisant du DPASV avec TMFE.

The average concentrations of Zn, Cd, Pb and Cu (ng dm⁻³) in the filtered surface seawater samples of the Adriatic Sea in different sampling periods and in the Lim Channel are compared in Table 1.

Table 1

Sampling period	Zn	Cd	Pb	Cu
September 1984	9,700	80	440	1,200
May 1975	9,700	70	500	700
February 1976	8,000	90	600	900
January 1980				
"Ionic" (pH 8)	1,800	4	47	90
"Total" (pH 2)	3,700	7	71	240
Lim Channel				
June 1979				
"Ionic" (pH 8)	1,210	3	30	200
"Total" (pH 2)	2,190	15	130	400

A new sampling procedure applied

Sampling: From 1979 at a depth of 0.5 m samples were collected in 500 ml polyethylene bottles fixed into plexyglass containers with a fiber glass

handle. Sampling bottles were pretreated by extra pure nitric acid and quartz distilled water. Before each sampling bottles were washed four times with sample water. Before and after sampling bottles were kept in polyethylene bags and handled with plastic gloves.

Analysis: Metal ion concentrations were determined by differential pulse anodic stripping voltammetry (DPASV) using a thin mercury electrode on glassy carbon (TMFE) and with efficient mixing of the seawater which provided very high sensitivity and accuracy (T. Magjer and M. Branica in Croat. Chem. Acta 49 (1) 1977 L1-L5). "Ionic" metal concentration at natural pH (8) and "total" metal concentration at pH 2 were determined by the standard addition method.

Field observations: During January 1980 cruises of the R/V "Andrija Mohorovičić" samples were analyzed on board. Though meteorological conditions were frequently inconvenient (wind up to 7 Beaufort and sea 5 - 6) the results are satisfactory and comparable with the data obtained in the laboratory on land

A relatively low metal concentration in seawater of the "closed" Adriatic Sea will be discussed from the geochemical point of view.