



**Linea 3.4**  
**Contaminazione chimica**



# **Metals remobilization from sediments of the Venice Lagoon.**

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Campaign 9-11/7/2001

Campaign 23-25/7/2001



## Structure of the chambers



pH measurements in  
one of the chambers

# Analytical aspects

## Sample treatment

Samples filtered by membrane filters (0.45  $\mu\text{m}$ )

## Analytical methodology

Total dissolved metal concentration by ICP-HRMS  
or ASV

Labile metal concentration by AdCSV

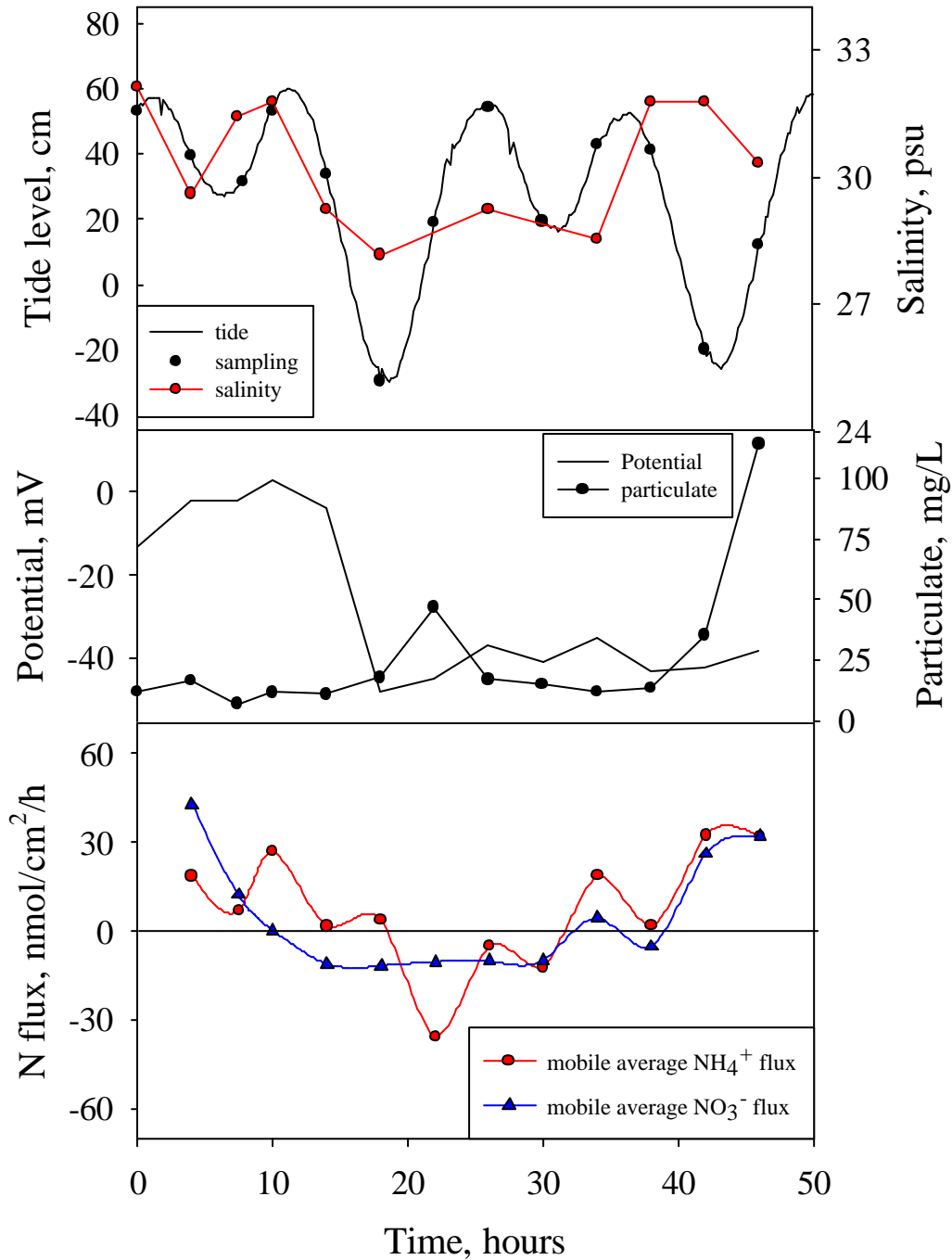
Particulate metal concentration after microwave  
digestion by ICP-OES

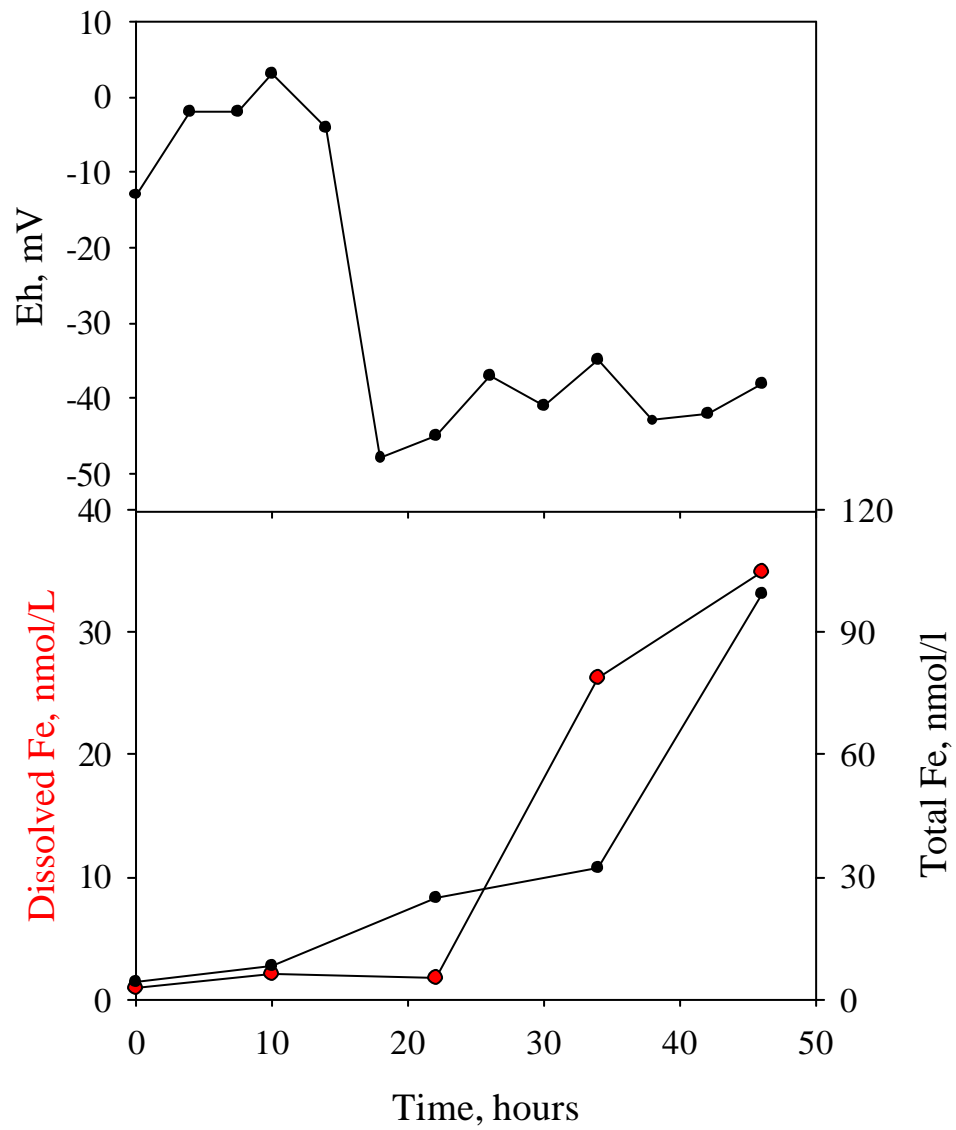
Thiol concentration by CSV

## Accuracy tests by CASS-4 Nearshore Sewater Reference material

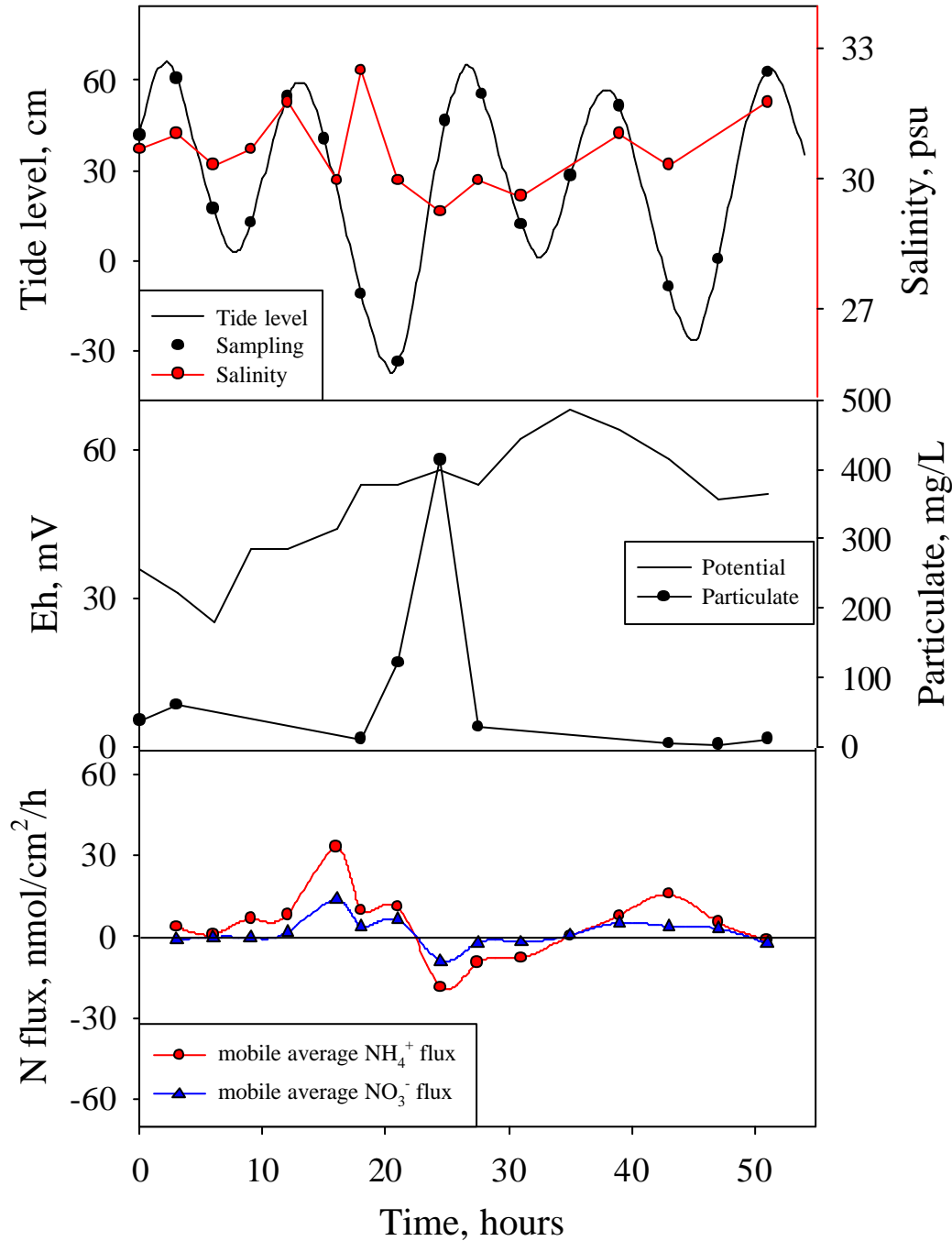
	Cr		Mn		Fe54		Co	
<b>Certified value (ppb)</b>	<b>0.144</b>	<b>±0.029</b>	<b>2.78</b>	<b>±0.19</b>	<b>0.713</b>	<b>±0.058</b>	<b>0.026</b>	<b>±0.003</b>
Found value (SD)	0.167	0.006	2.862	0.114	0.727	0.043	0.032	0.005
	Cd111		U		V		Zn68	
<b>Certified value (ppb)</b>	<b>0.026</b>	<b>±0.003</b>	<b>3.0</b>		<b>1.18</b>	<b>±0.16</b>	<b>0.381</b>	<b>±0.057</b>
Found value (SD)	0.030	0.004	2.669	0.158	1.221	0.045	0.360	0.023
	Cu65		Sb121		Ag 109			
<b>Certified value (ppb)</b>	<b>0.592</b>	<b>±0.055</b>	<b>--</b>		<b>--</b>			
Found value (SD)	0.663	0.068	0.274	0.004	0.0078	0.0003		

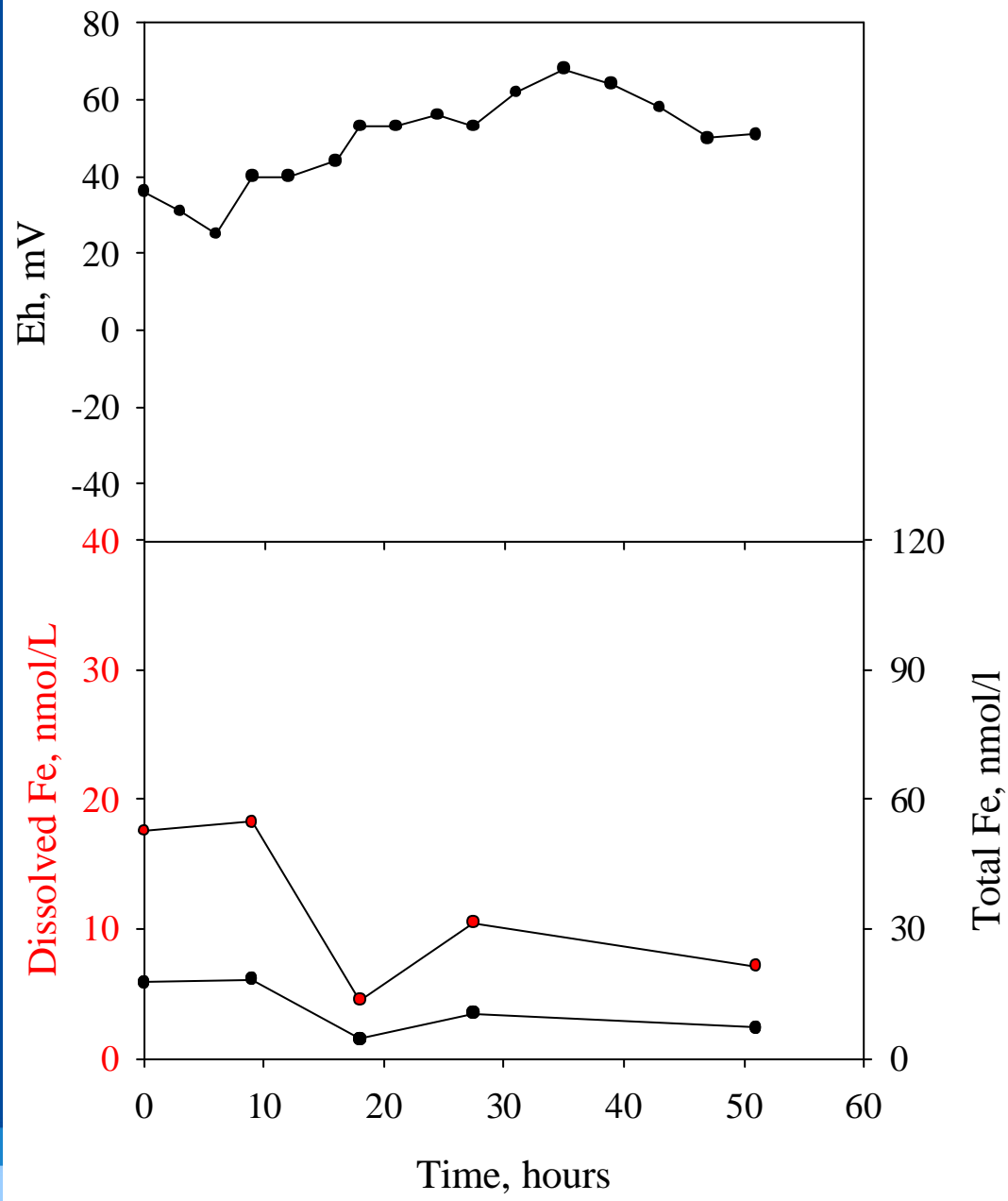
# Trezze Channel Area





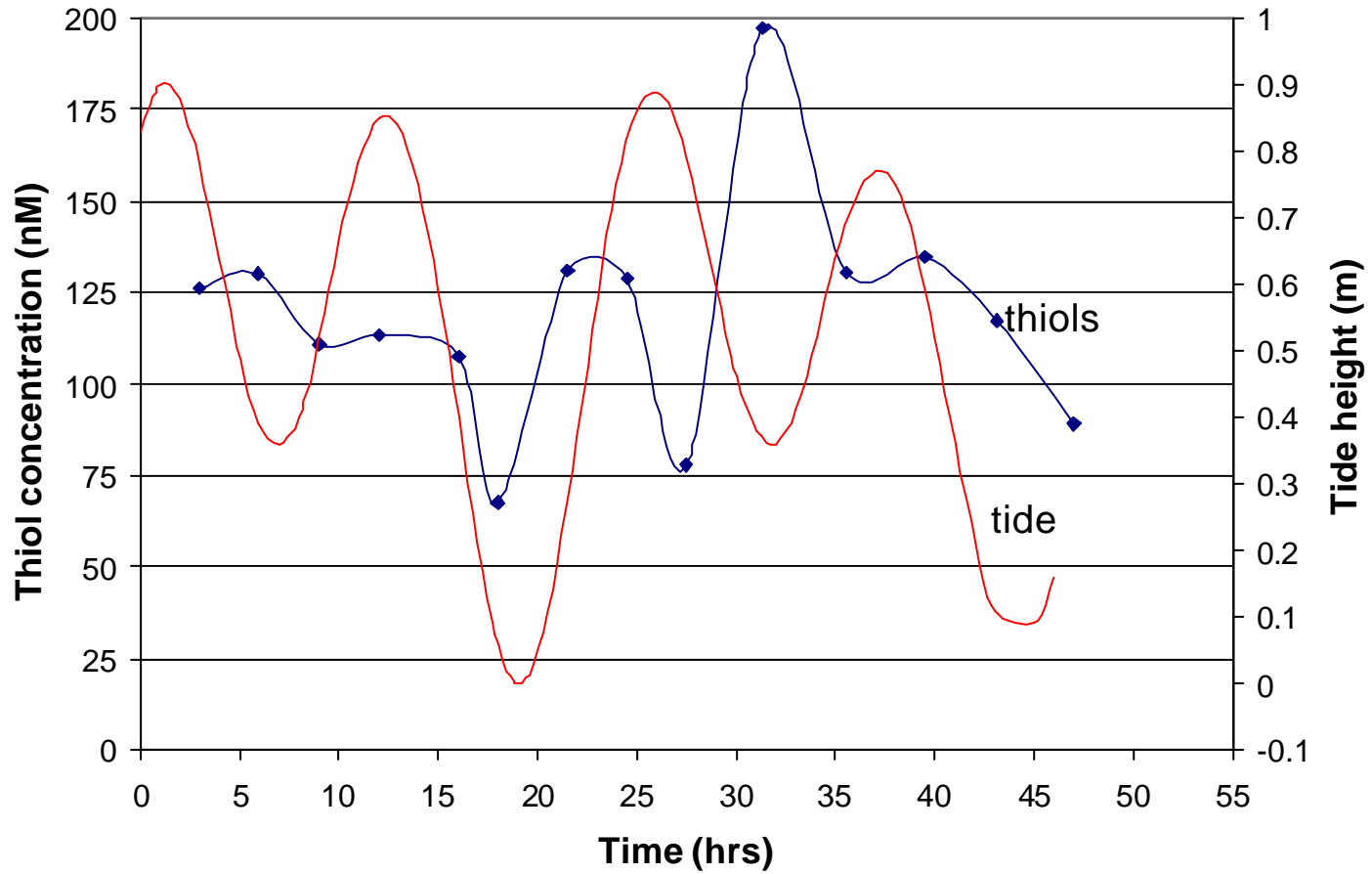
# Campalto Area





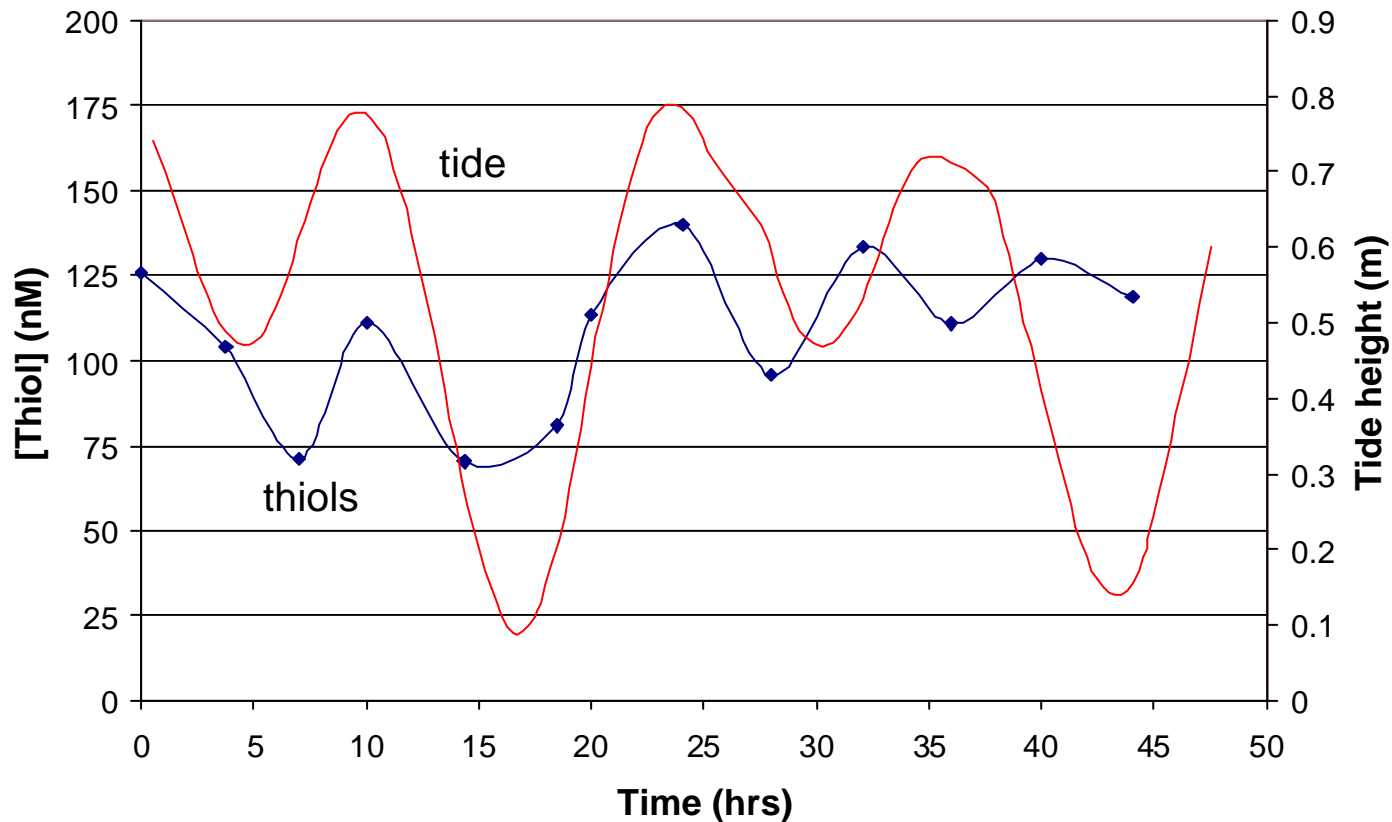
# Thiol concentration in Venice Lagoon Campalto site

Start 13:00 23/7/01

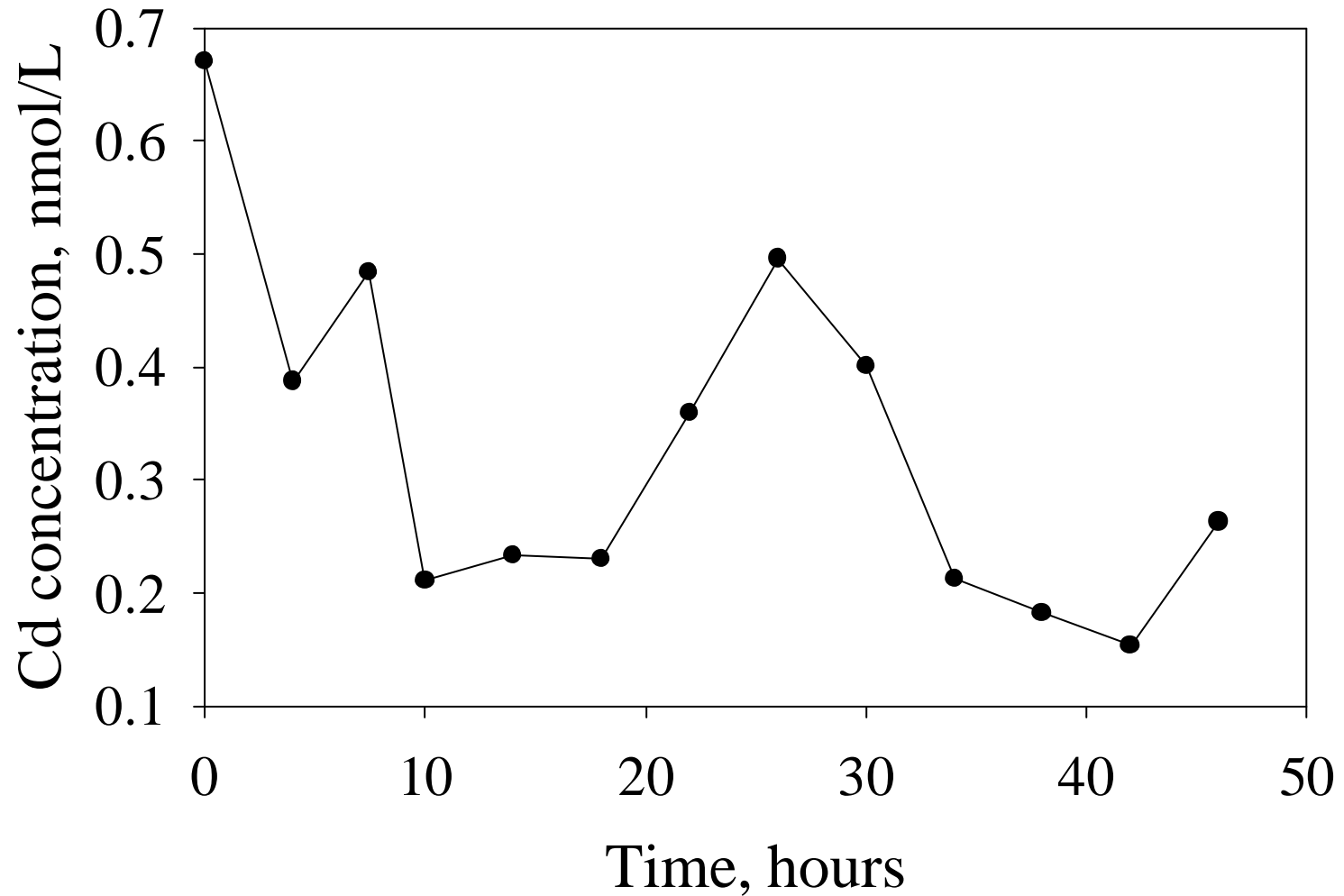


# Thiols in Venice Lagoon Trezze site

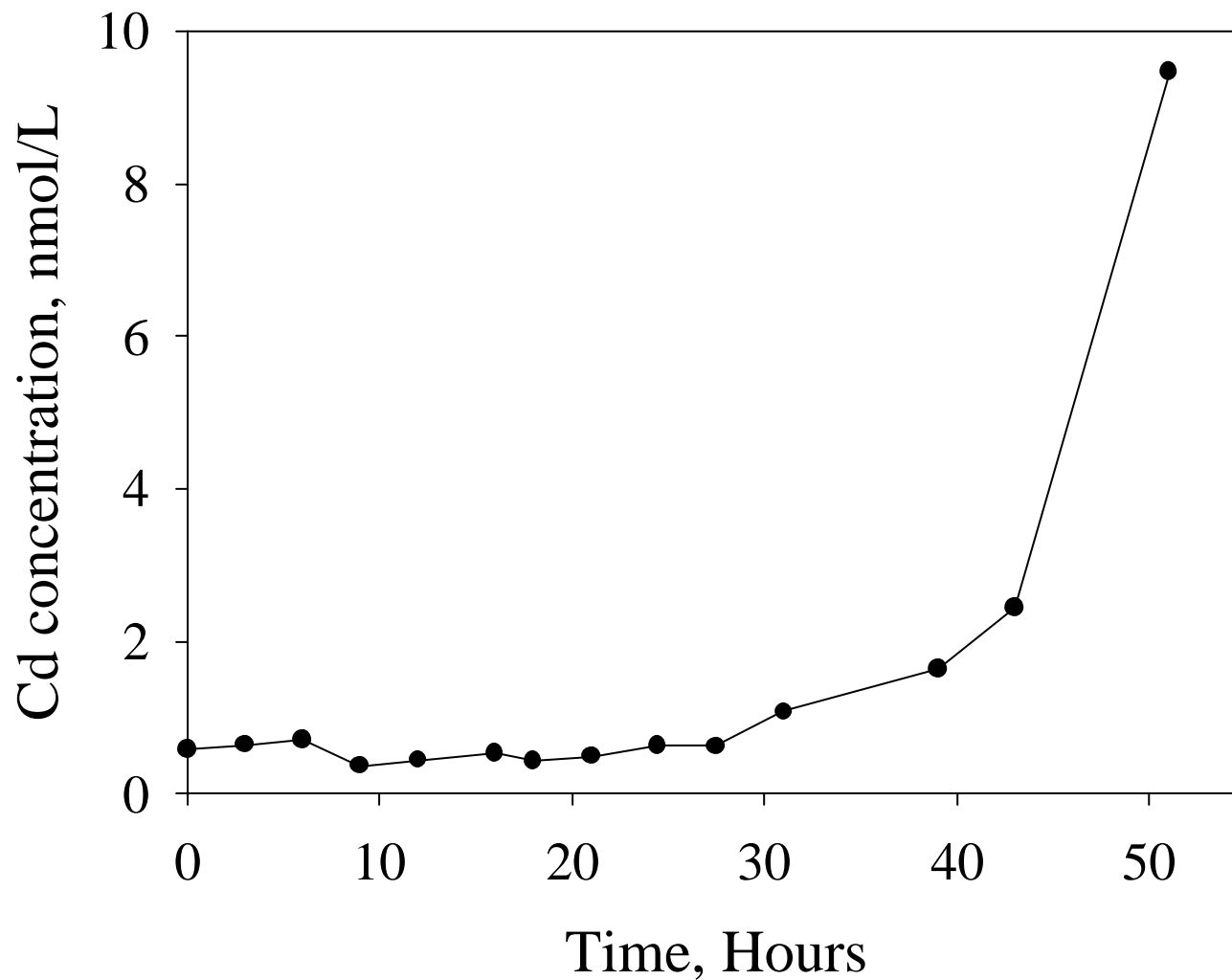
Start 15:30 9/7/01



# Cadmium in the Trezze Area experiment

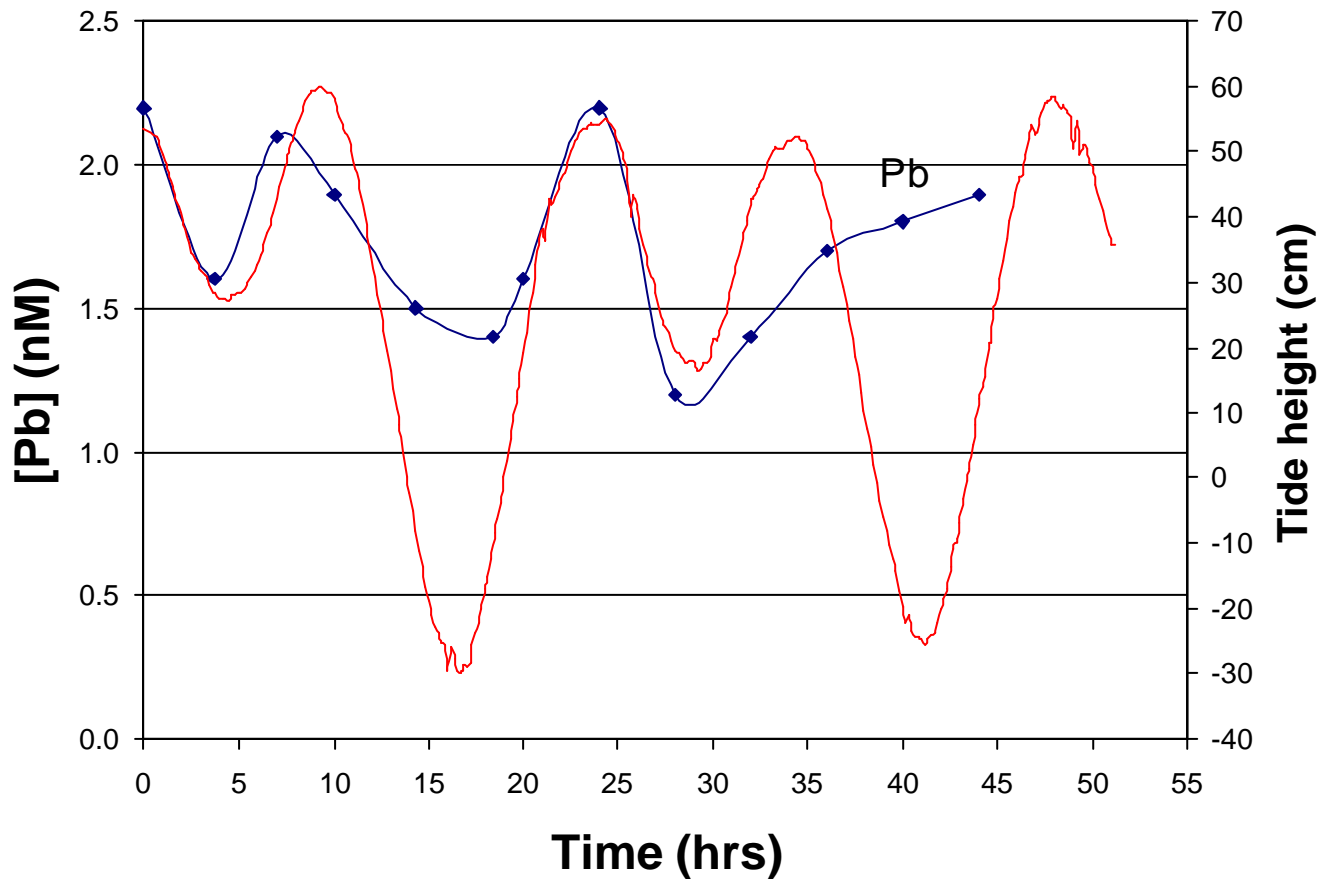


# Cadmium in the Campalto experiment

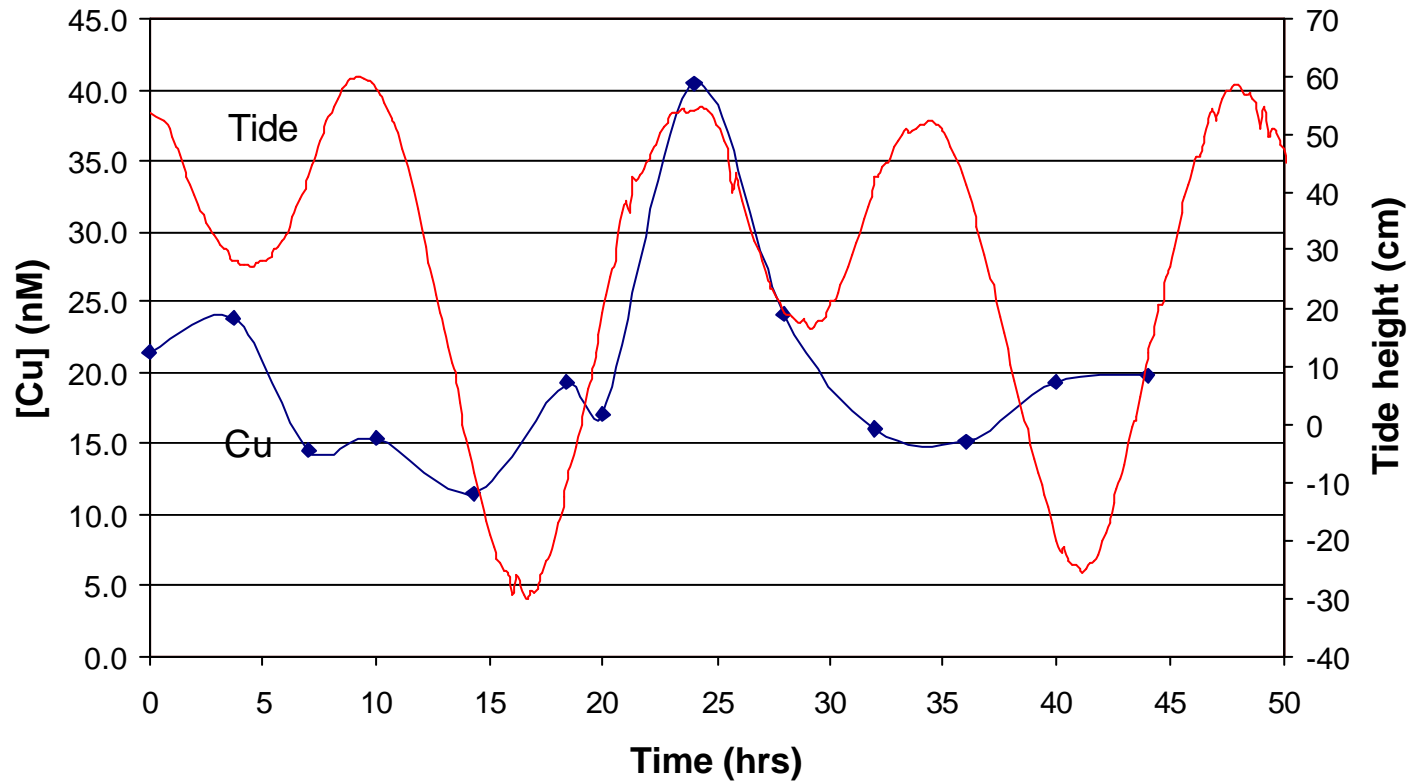


# Pb concentration in Venice lagoon Trezze site

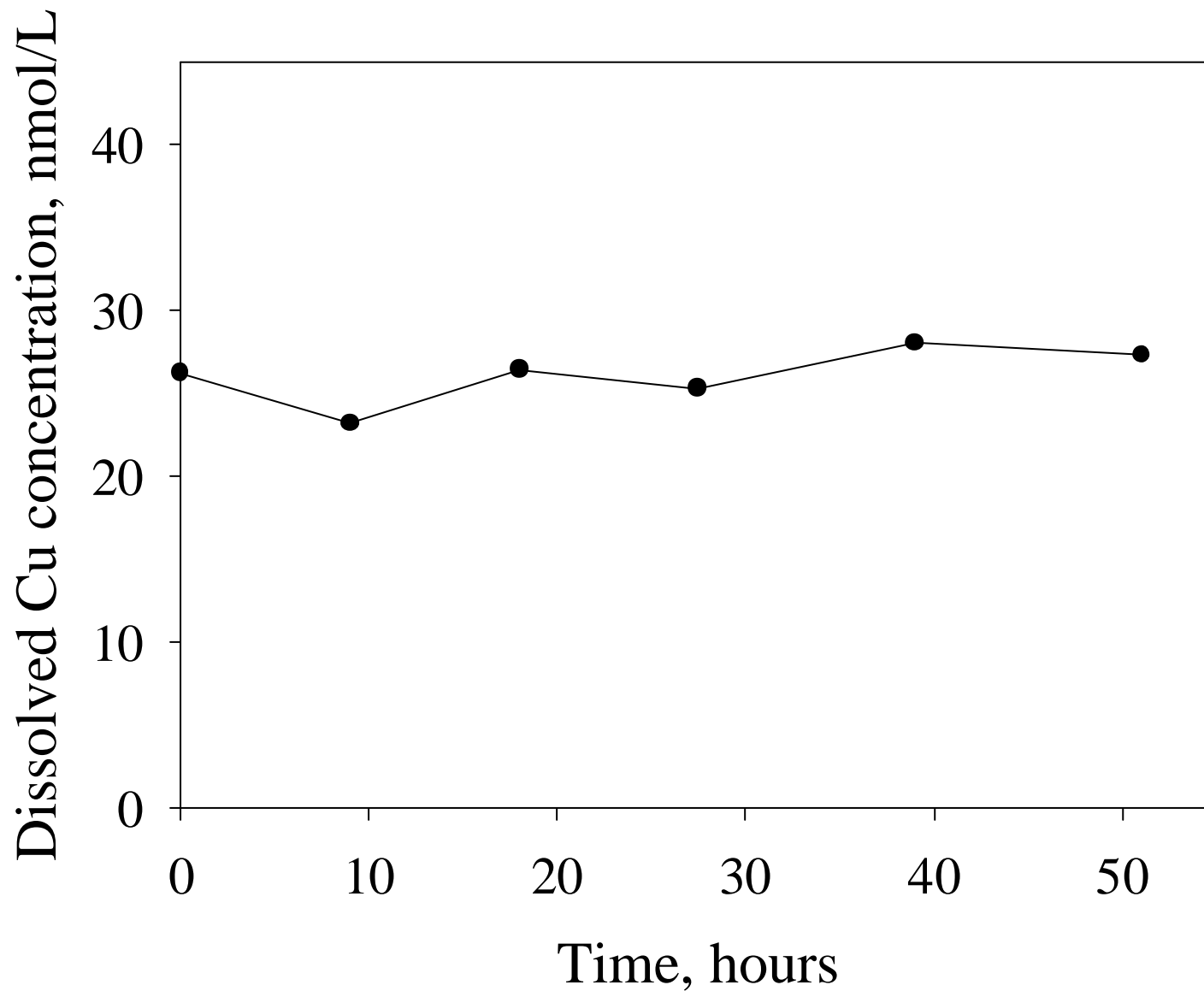
Start 15:30 9/7/01



### Cu concentration in Venice lagoon Trezze area Start 13:00 9/7/01



Cu concentration in Venice Lagoon Campalto area experiment



## Problems

Leakage of the chambers during tides  
Surfacing of chambers during the second  
experiment

## Solutions

Modify chambers  
Obscure the chamber top  
Select a deeper site in the Campalto area

## Further experiments

- In-situ measurement of metals in small chambers above sediments
- Combined with measurement of O<sub>2</sub> and Eh
- Selective collection of samples for speciation
- Extension of experiments until 60-70 hours