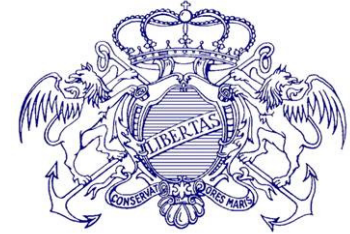




DRAGAGGIO DI FONDALI PORTUALI: MONITORAGGI A CONFRONTO



DEFINIZIONE DELLA DINAMICA NATURALE DEI SEDIMENTI NEL PORTO DI GENOVA

M. Capello¹, L. Cutroneo¹, S. Tucci¹

¹ DIP.TE.RIS. – Università degli Studi di Genova (Italia)

Genova, 2 luglio 2009



Image © 2008 DigitalGlobe

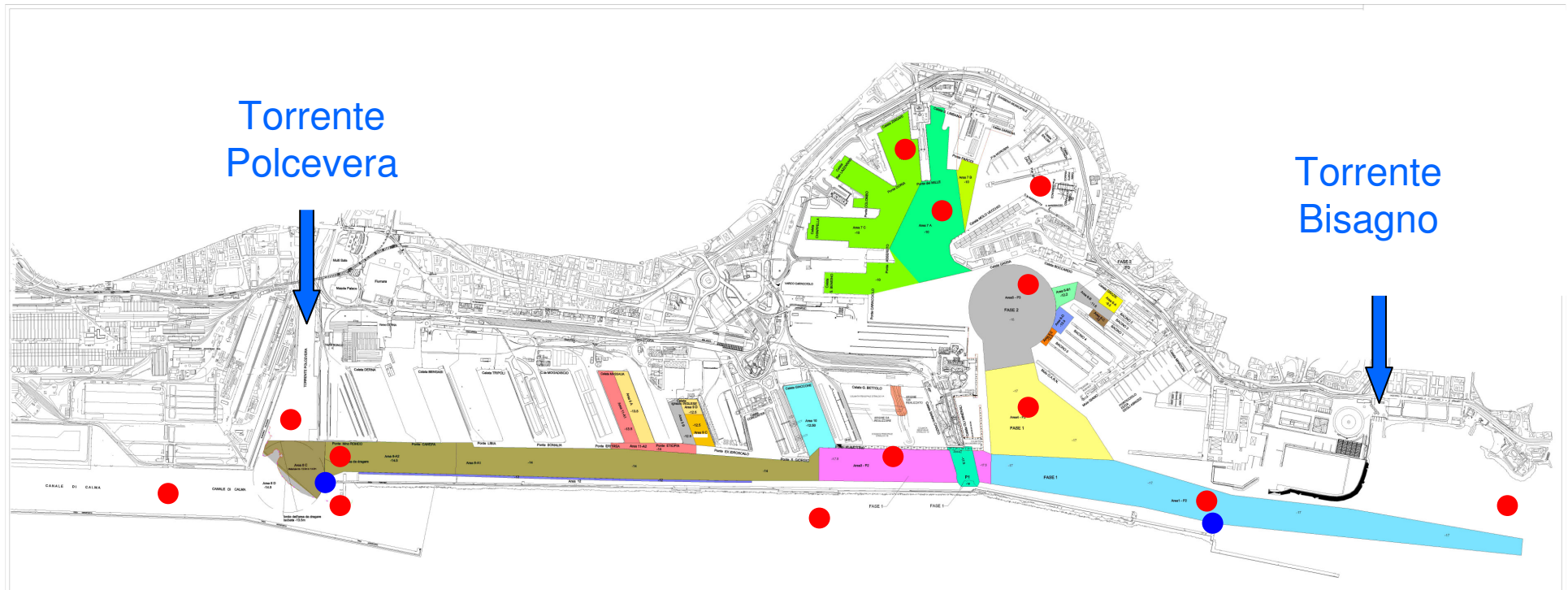
© 2007 Google™

°53'14.79" E

Streaming ||||| 100%

Alt 9.45 km

Stazioni di Bianco



ANALISI CONDOTTE NELLA COLONNA D'ACQUA (7 campagne)

Materiale particolato totale (TPM)
(Organico ed Inorganico)

Analisi dimensionali del TPM



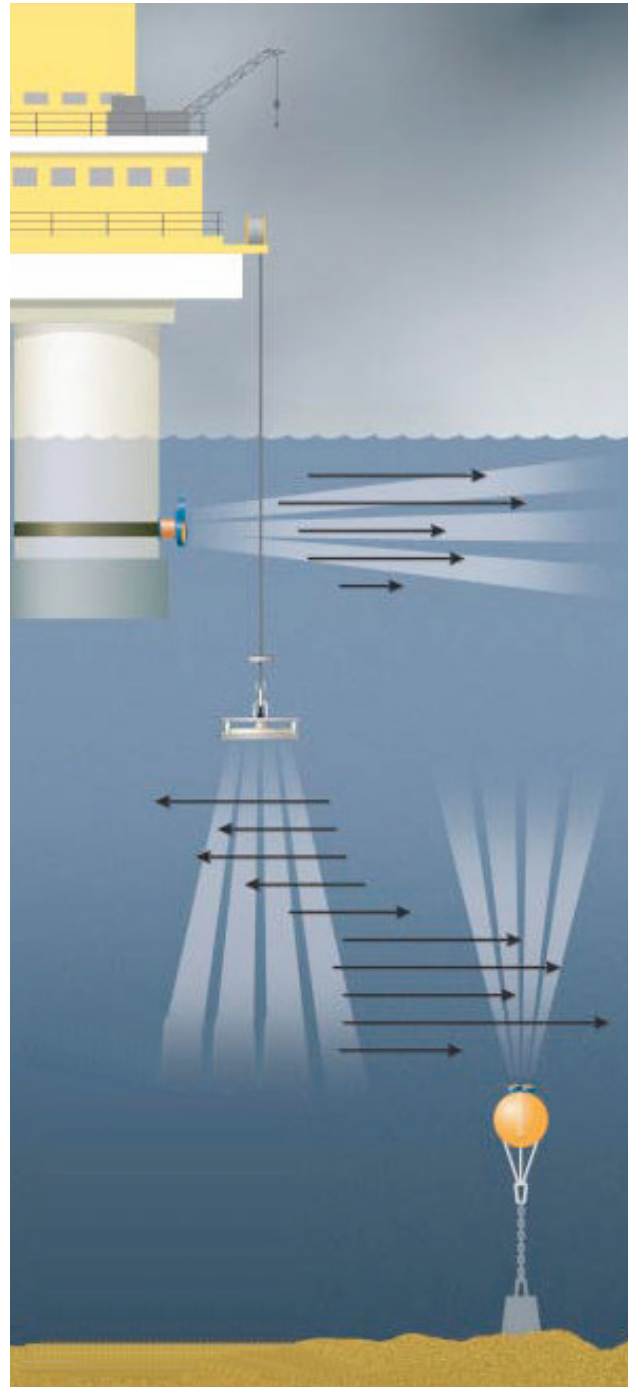
Dati fisici e torbidità

Misure di corrente con V-ADCP

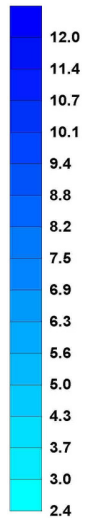
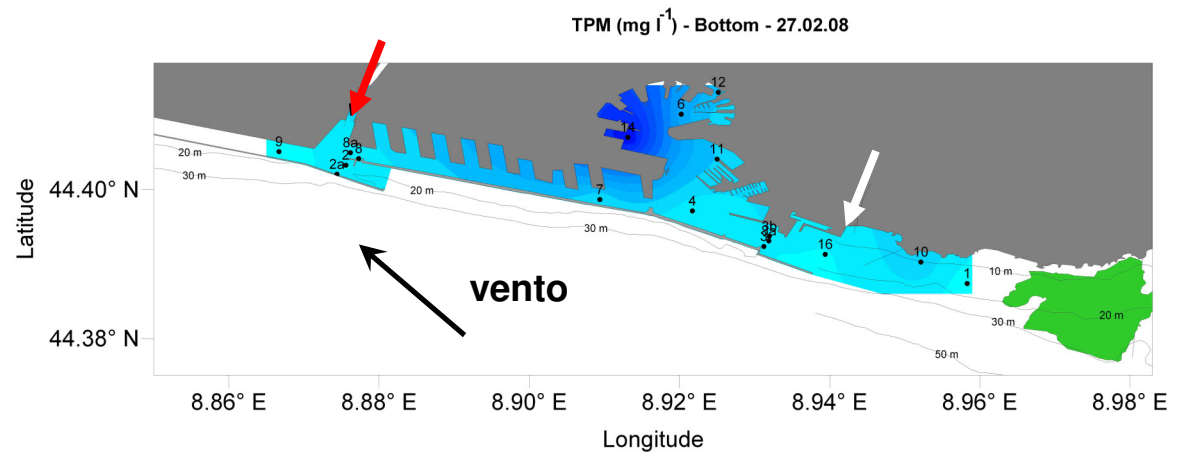
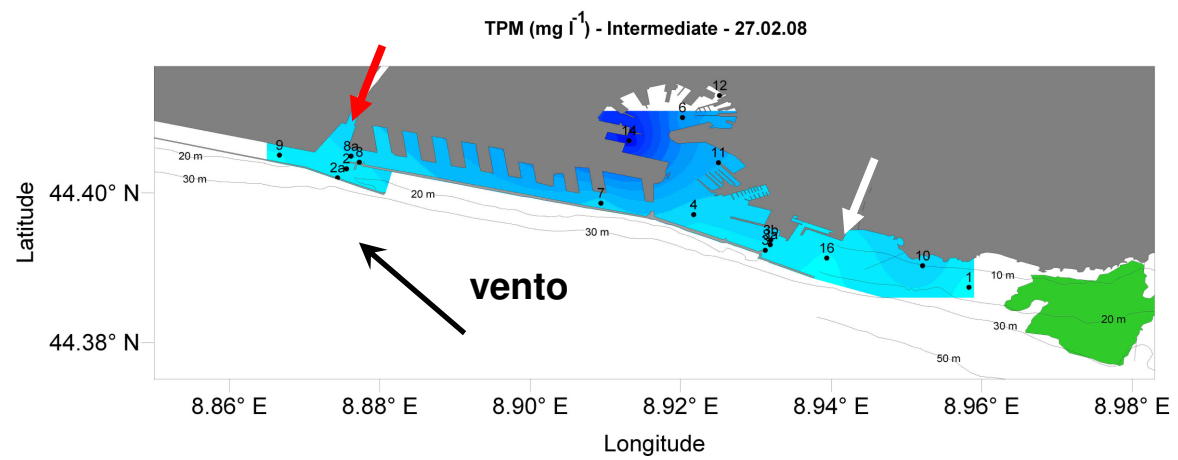
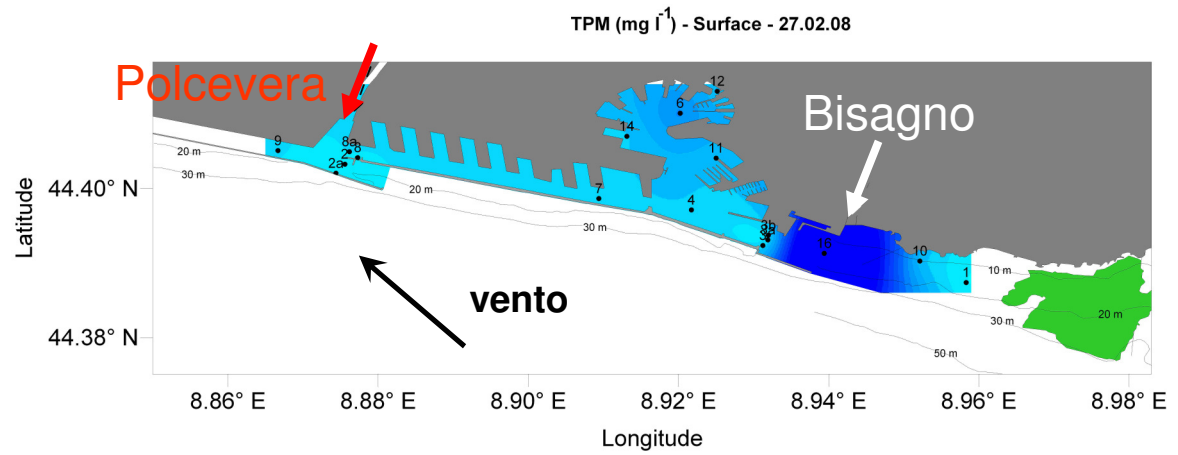
Calibrazione dei dati "TPM vs torbidità" per taratura ADCP

Valutazione del TPM con il V-ADCP e SediView

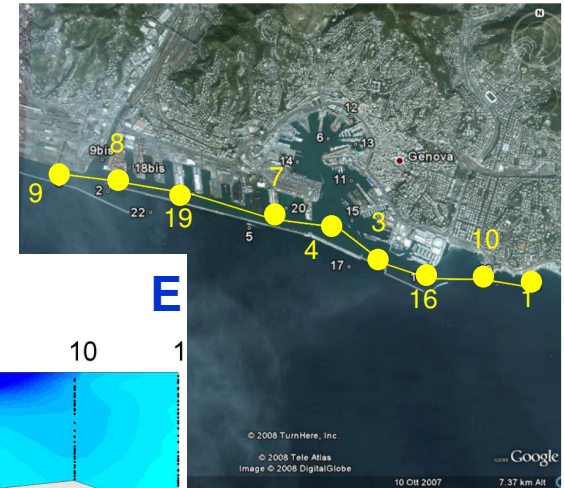
**Esempi di installazione di
profilatori acustici
orizzontali e verticali**



**Distribuzione
orizzontale
del TPM (mg l^{-1})
(27.02.2008)**



Distribuzione verticale del TPM All'interno del Porto (transetto 9-1)



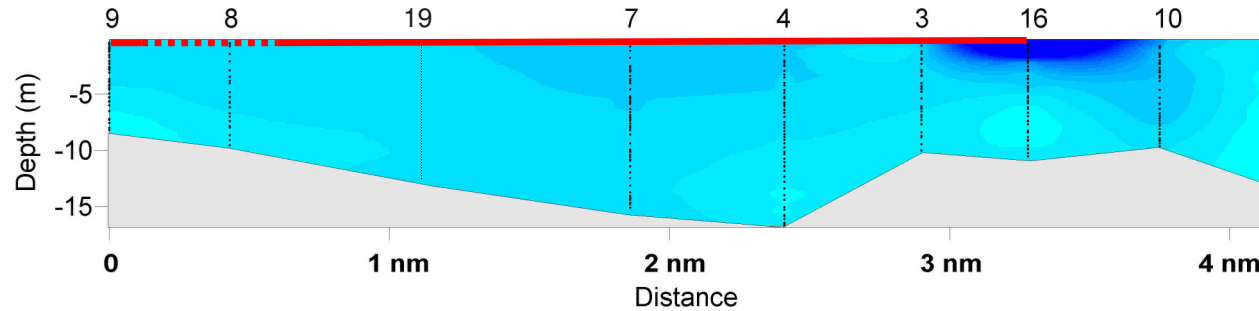
Direzione del vento

W

TPM (mg l^{-1}) - 27.02.08

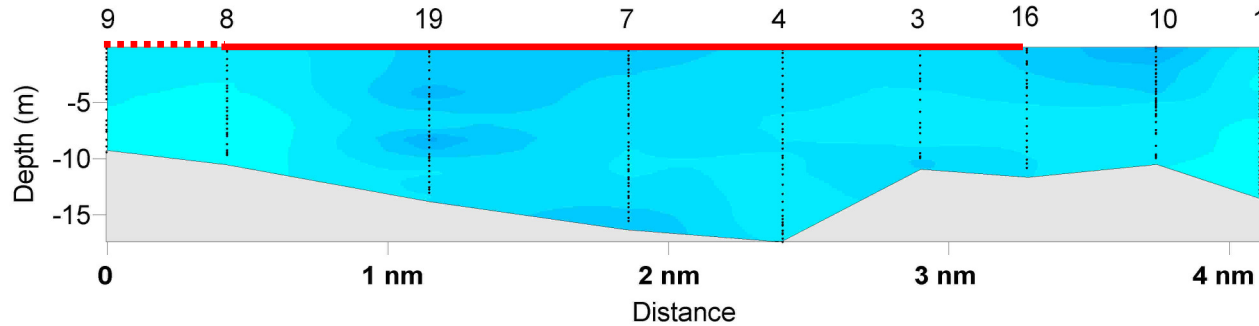
E

SW <- SE



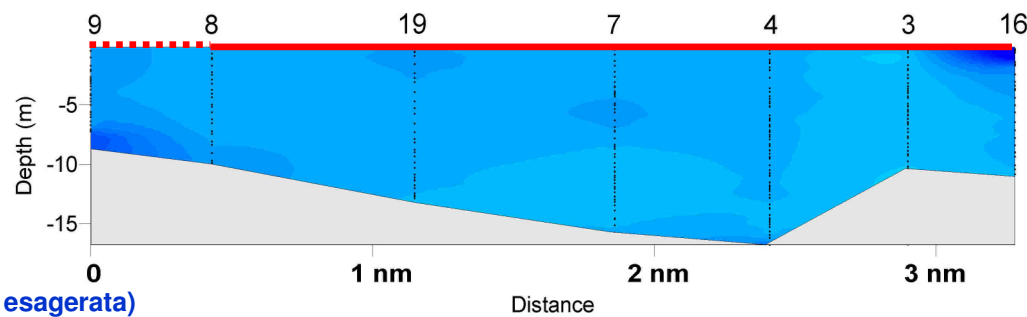
N <- NE

TPM (mg l^{-1}) - 05.03.08



SE

TPM (mg l^{-1}) - 21.03.08



(la scala verticale è esagerata)

Parametri fisici

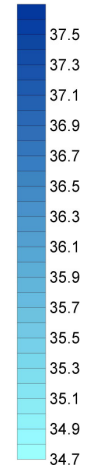
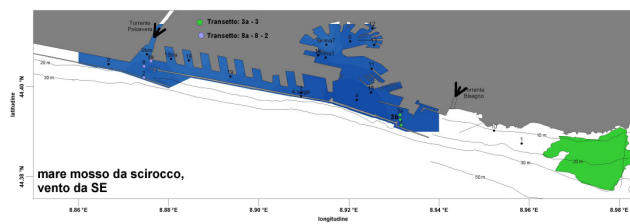
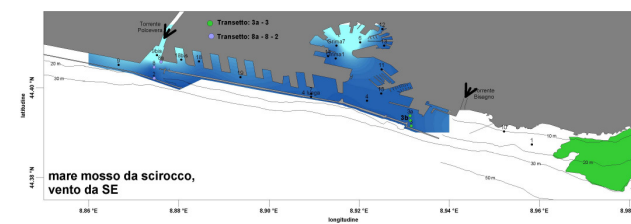
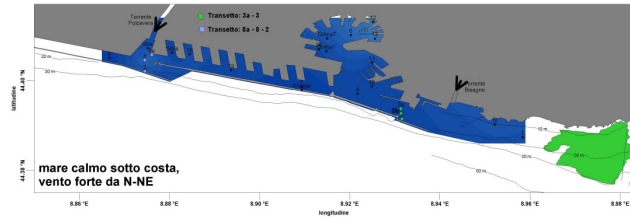
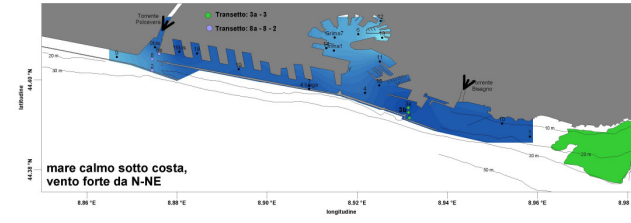
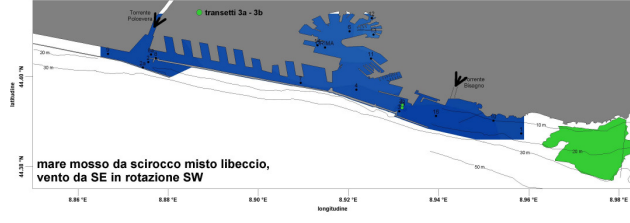
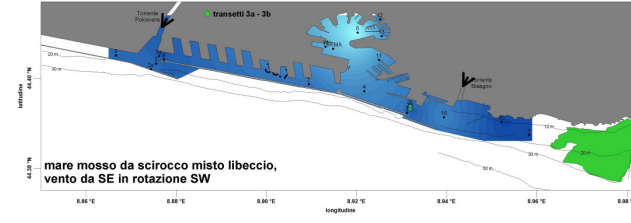
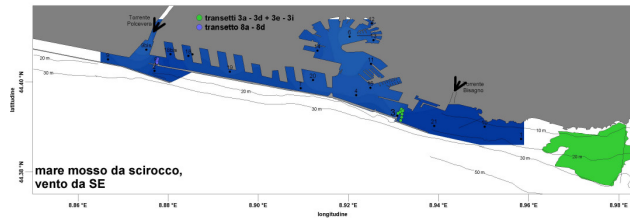
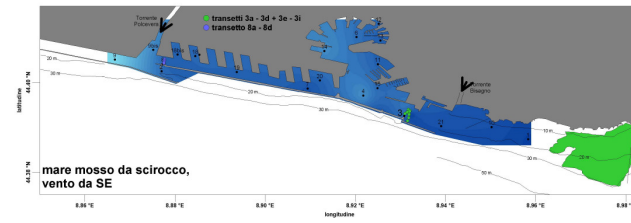
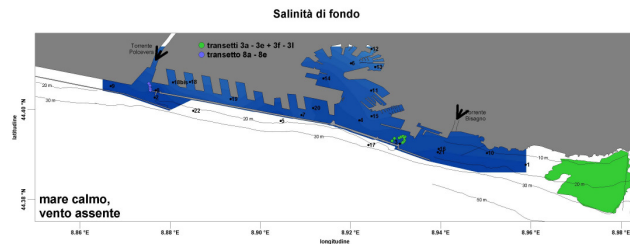
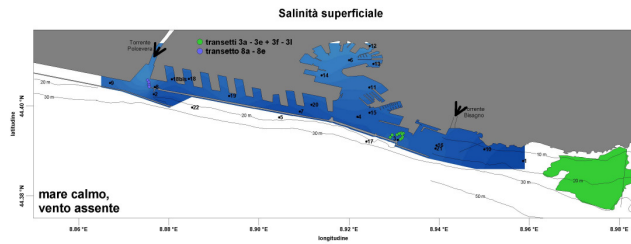
Superficie

Fondo

T
o
r
b
i
d
i
t
a

S
A
L
I
N
I
T
A

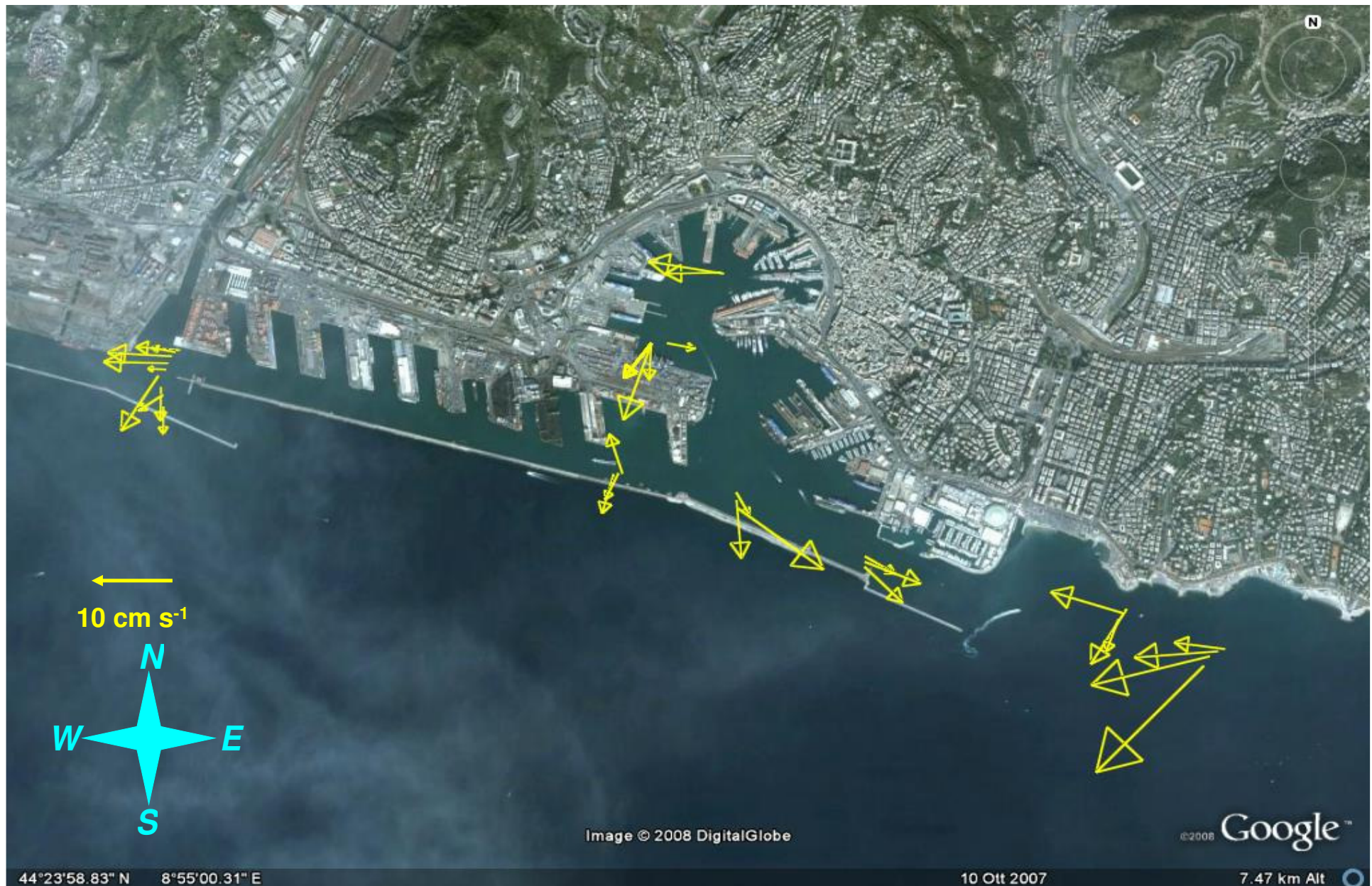
(FTU)



Vento da SE - Profondità: 2.0 m

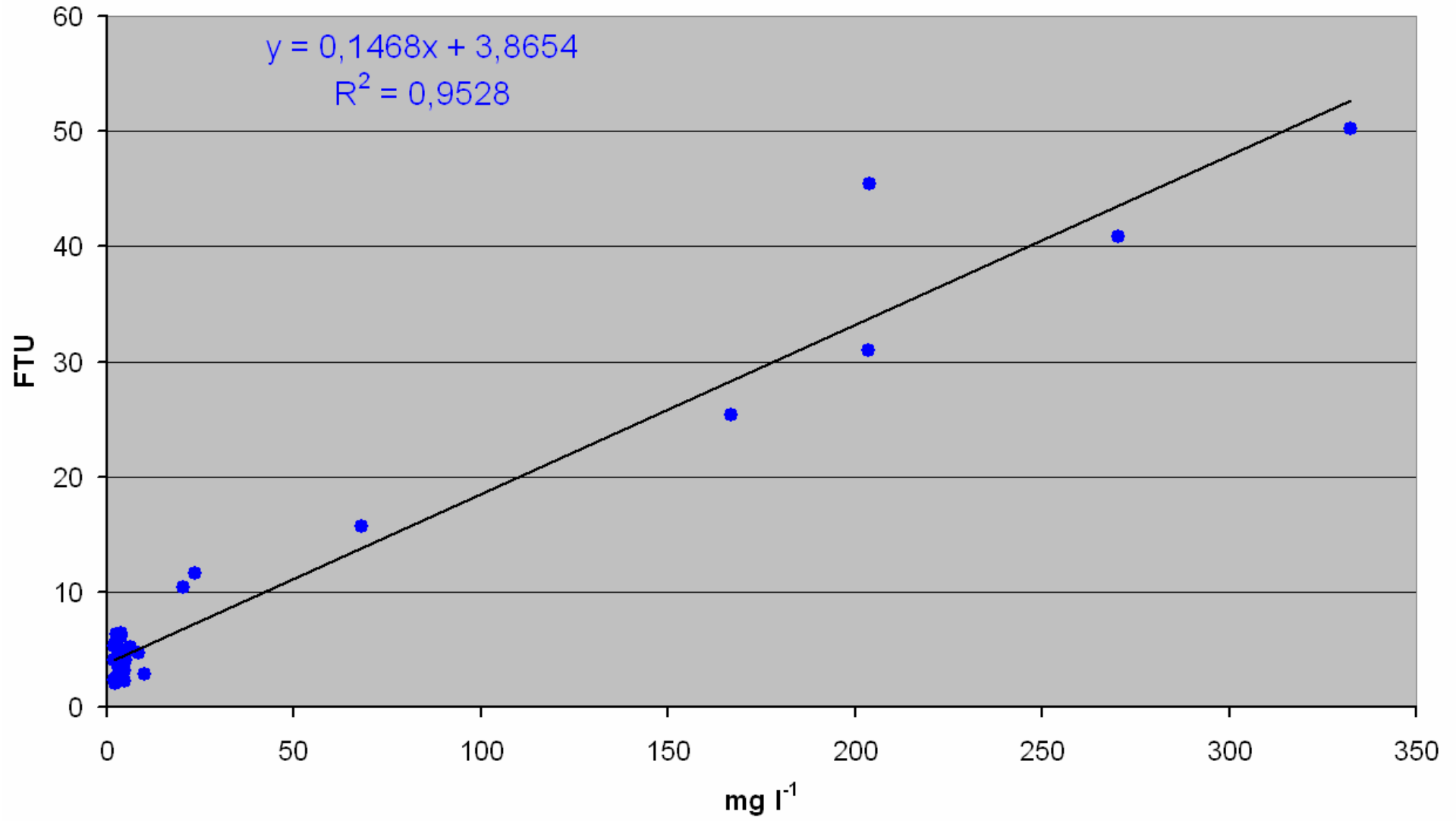


Vento variabile da NE a N - Profondità 2.0 m

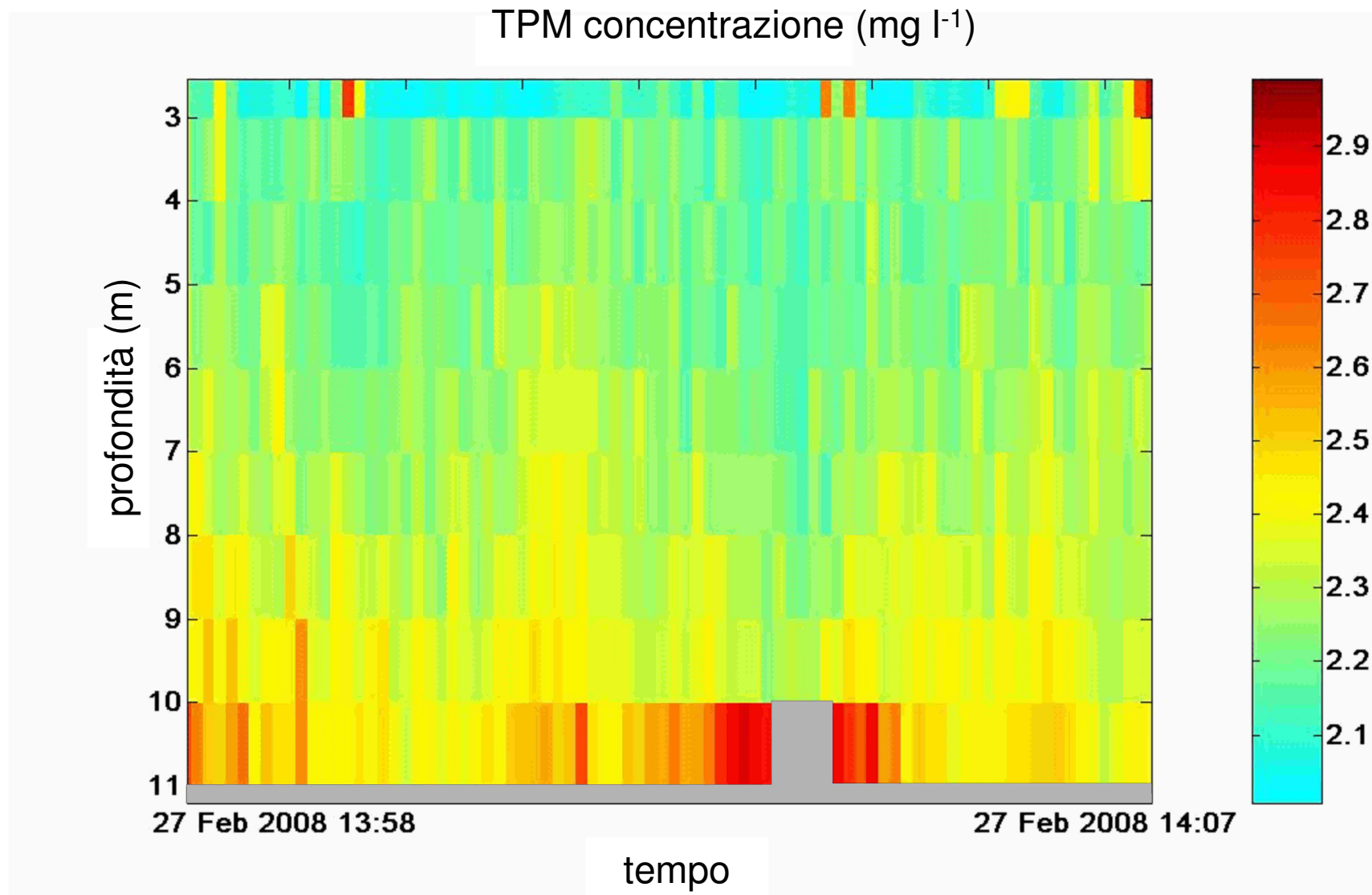


Calibrazione del torbidimetro

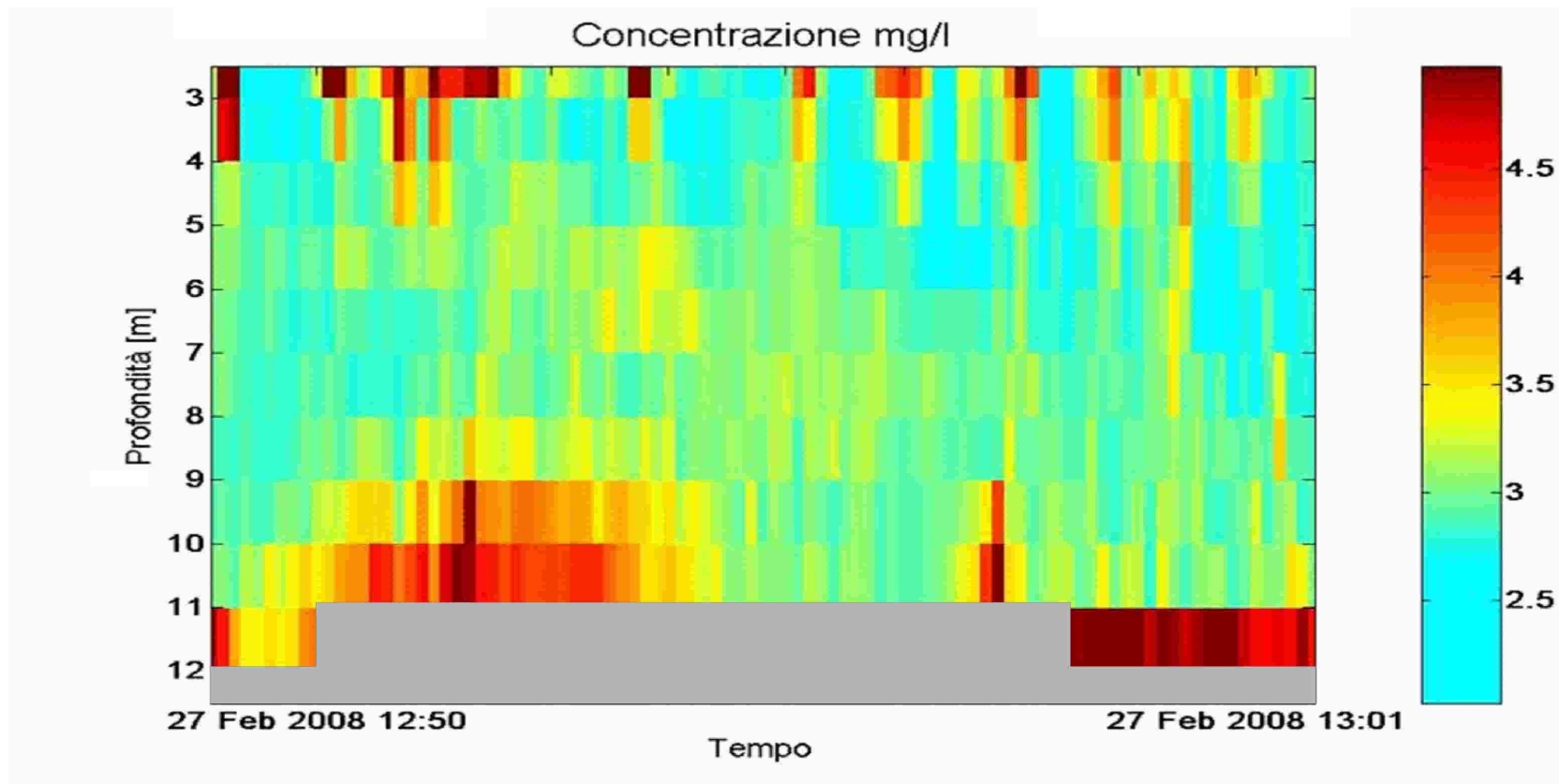
turbidity (FTU) vs TPM (mg l⁻¹)



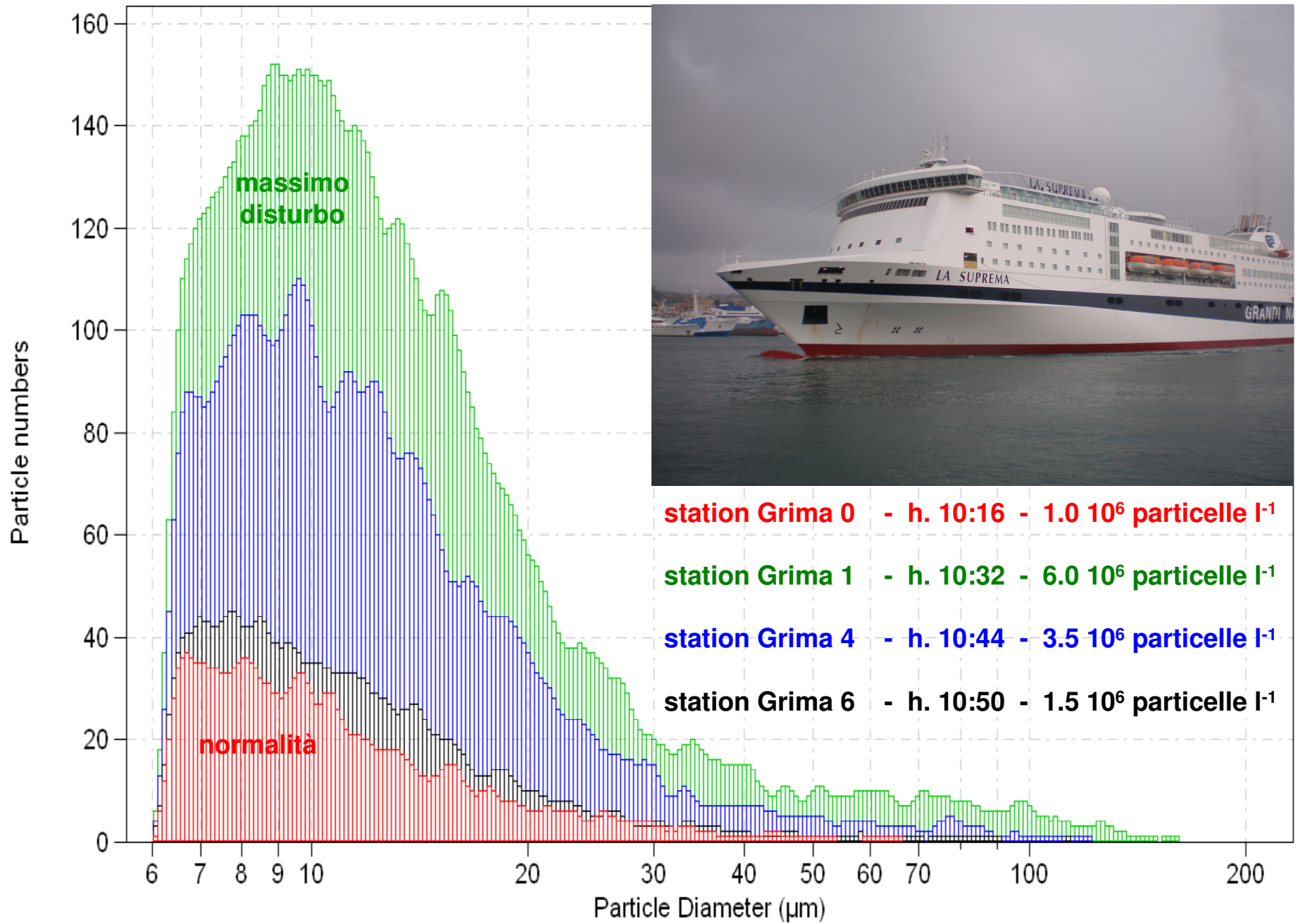
27.02.08 - Stazione 1, prossima alla prateria di *Posidonia oc.*
(vento in rotazione da SE a SW)



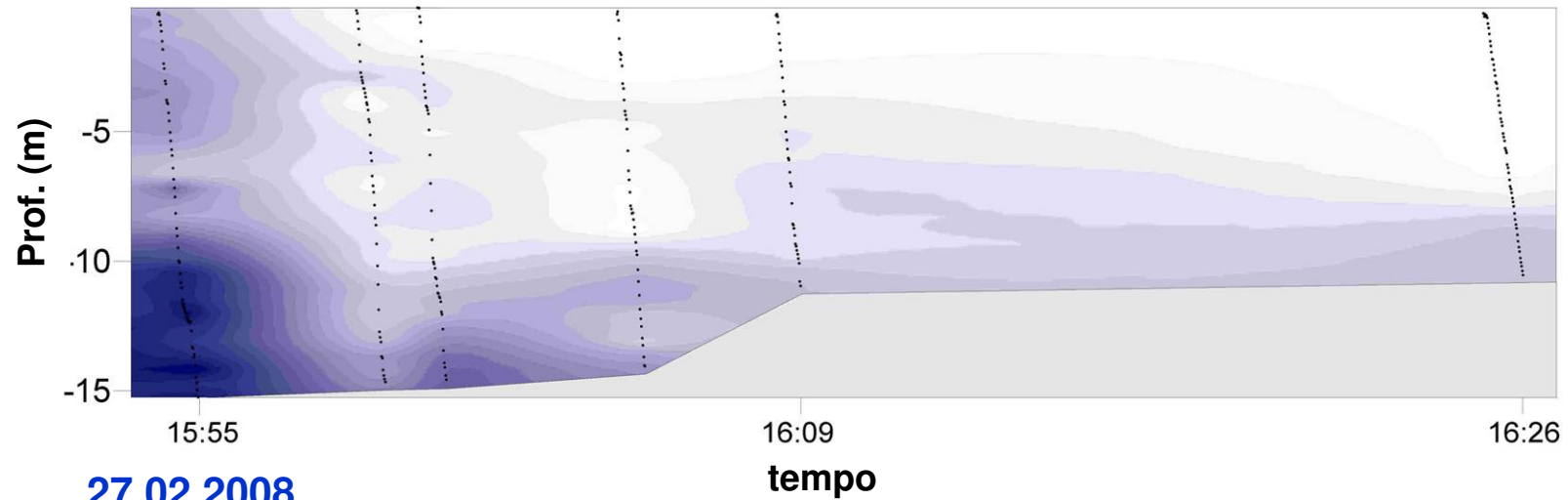
27.02.2008 - Stazione 3, entrata est del porto
(vento variabile tra SE e SW)



"Grimaldi" experiment



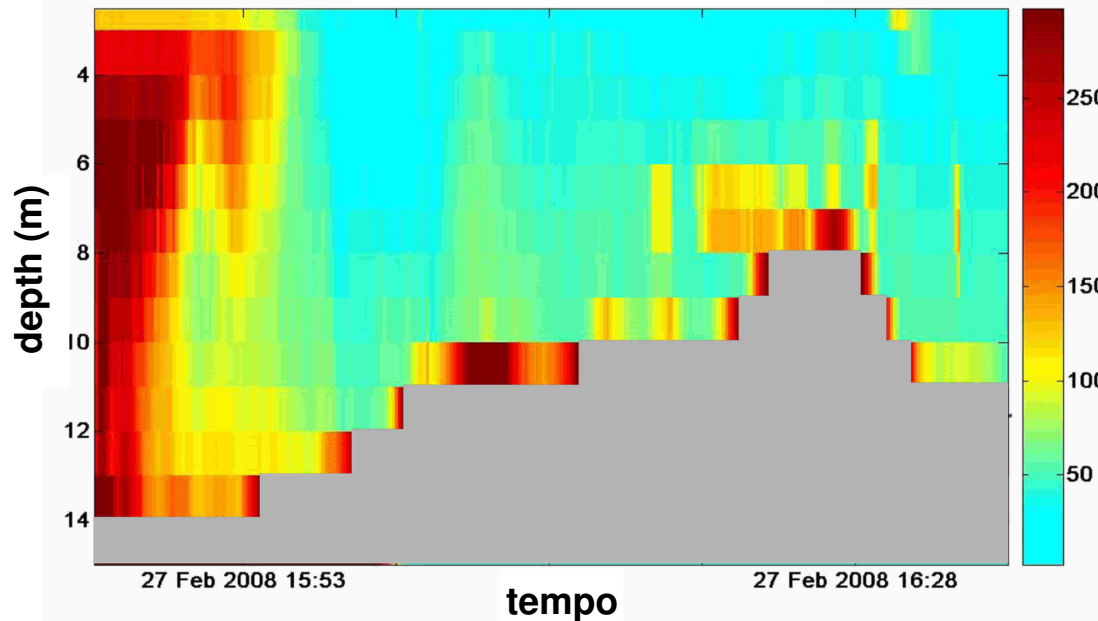
Esperimento "Grimaldi" - torbidità (FTU)



27.02.2008

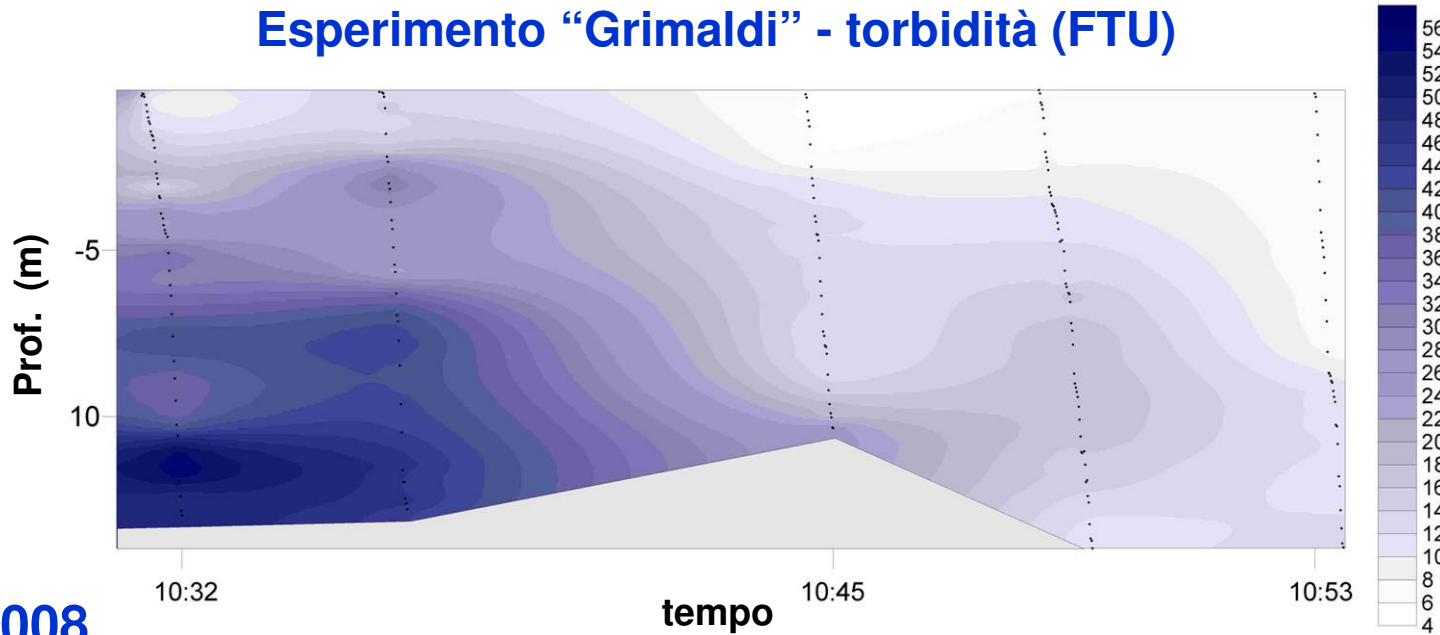
(vento in rotazione da SE to SW)

TPM concentrazione (mg l^{-1})



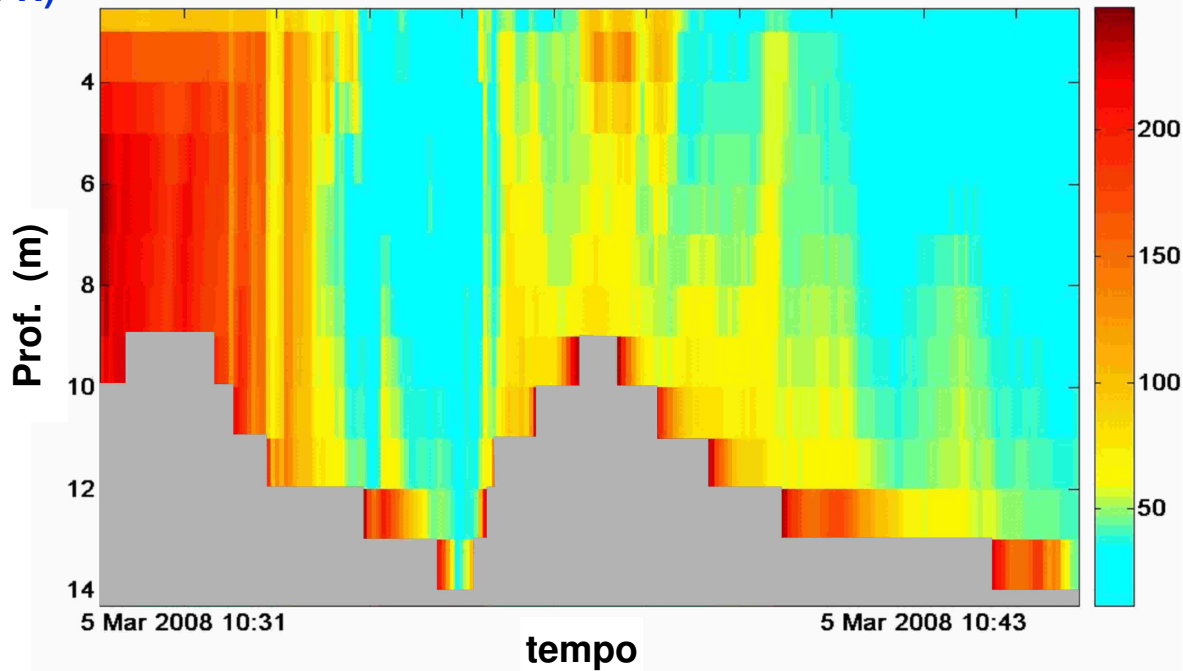
esperimento
"Grimaldi"
TPM
(ADCP + SediView)

Esperimento "Grimaldi" - torbidità (FTU)



05.03.2008
(vento variabile
da NE to N)

TPM concentrazione (mg l⁻¹)



**esperimento
"Grimaldi" TPM
(ADCP +
SediView)**

In breve...

Condizioni "Normali" :
(limiti maggiori)

Torbidità – 10 FTU

TPM – 6-8 mg l⁻¹

Particelle – 1.0 milione l⁻¹

Conditions "Disturbate" :
(limiti massimi)

Torbidità – 60 FTU

TPM – 600 mg l⁻¹

Particelle – 6.5 milioni l⁻¹

Tempo di Residenza – 45-60'

Vento da SE, SW and NE

I
V

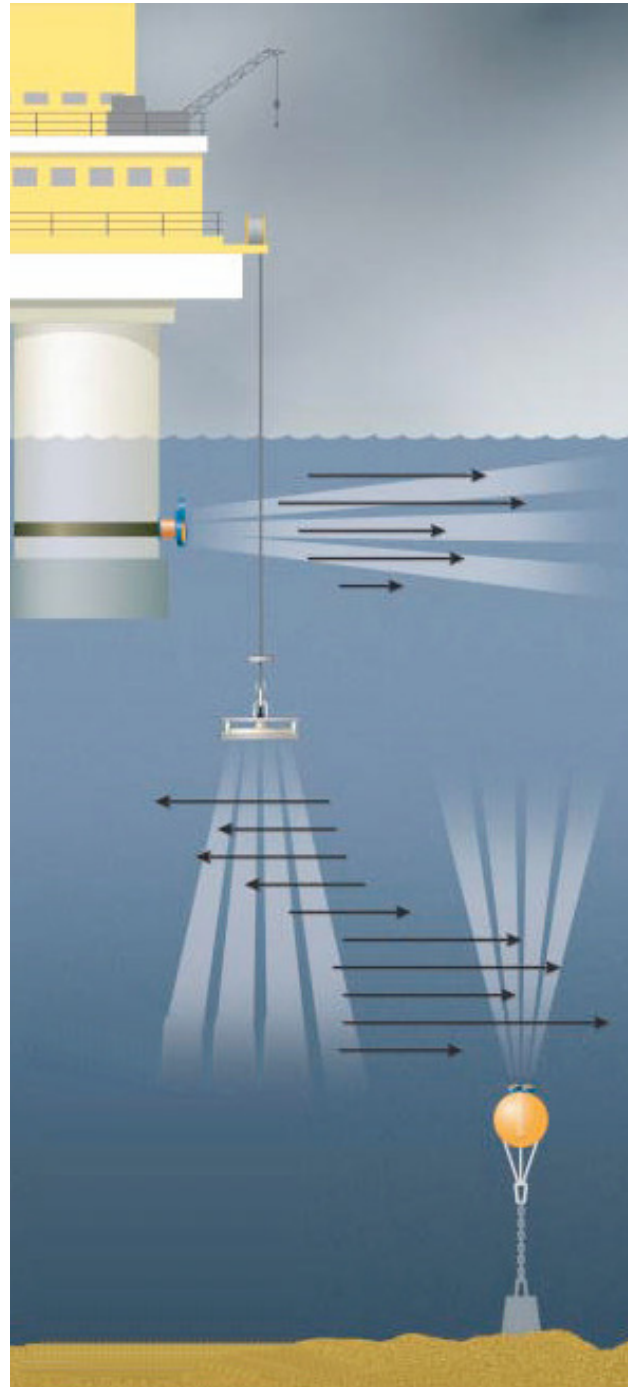
sedimenti -> nell'area portuale

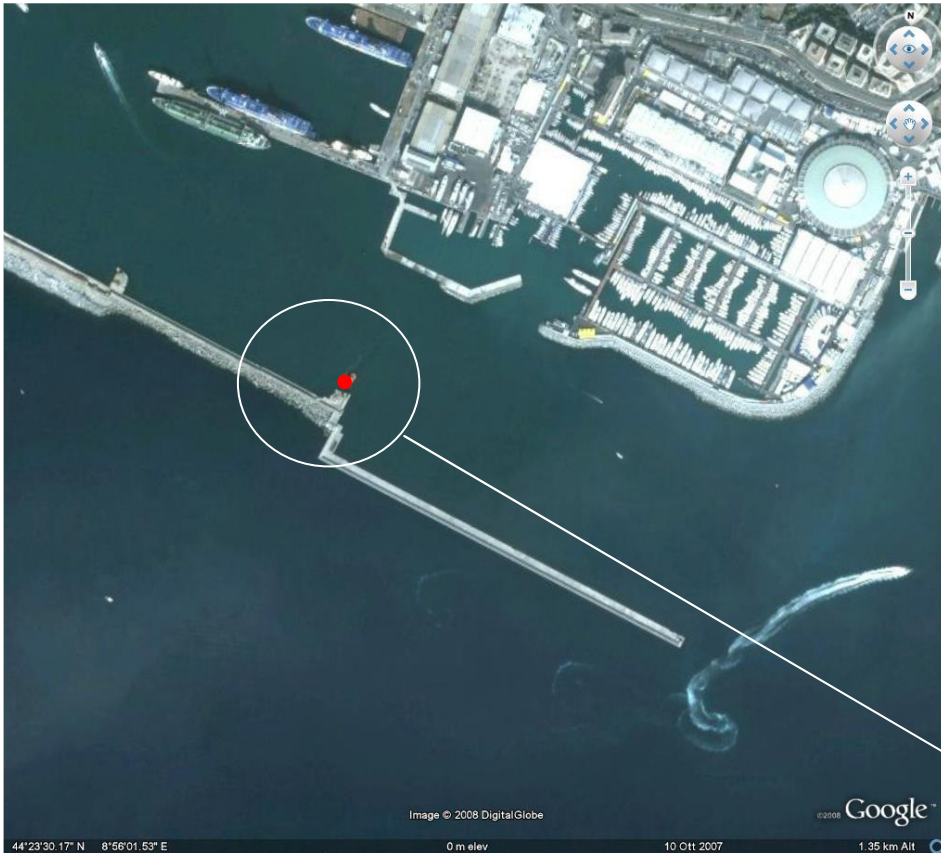
Vento da N

I
V

sedimenti -> fuori dall'area portuale

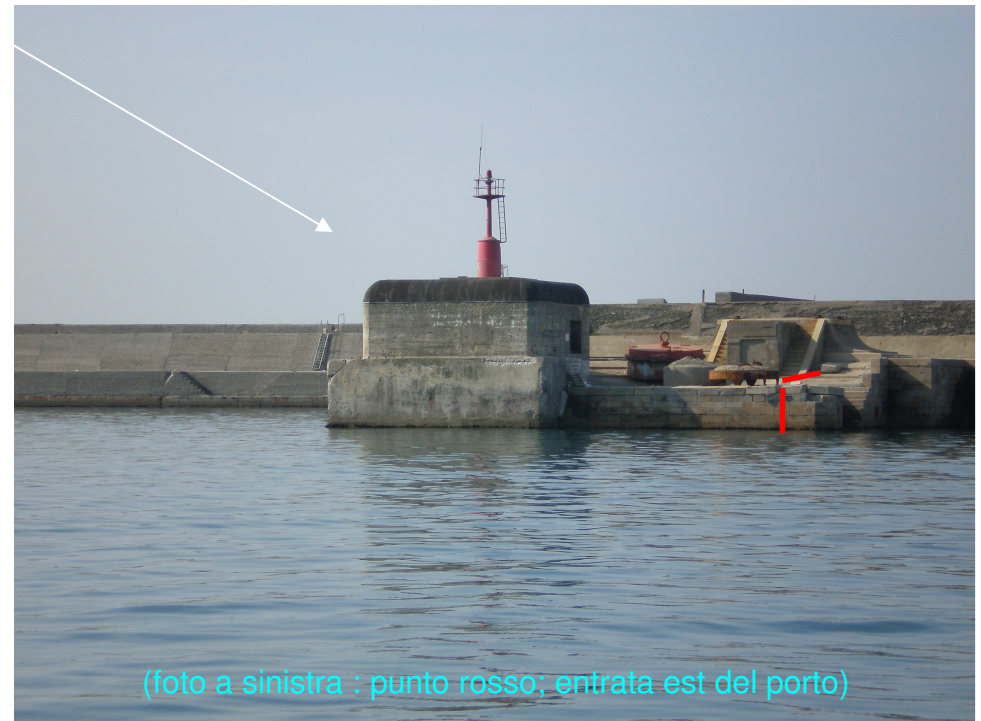
**Esempi di installazione di
profilatori acustici
orizzontali e verticali**



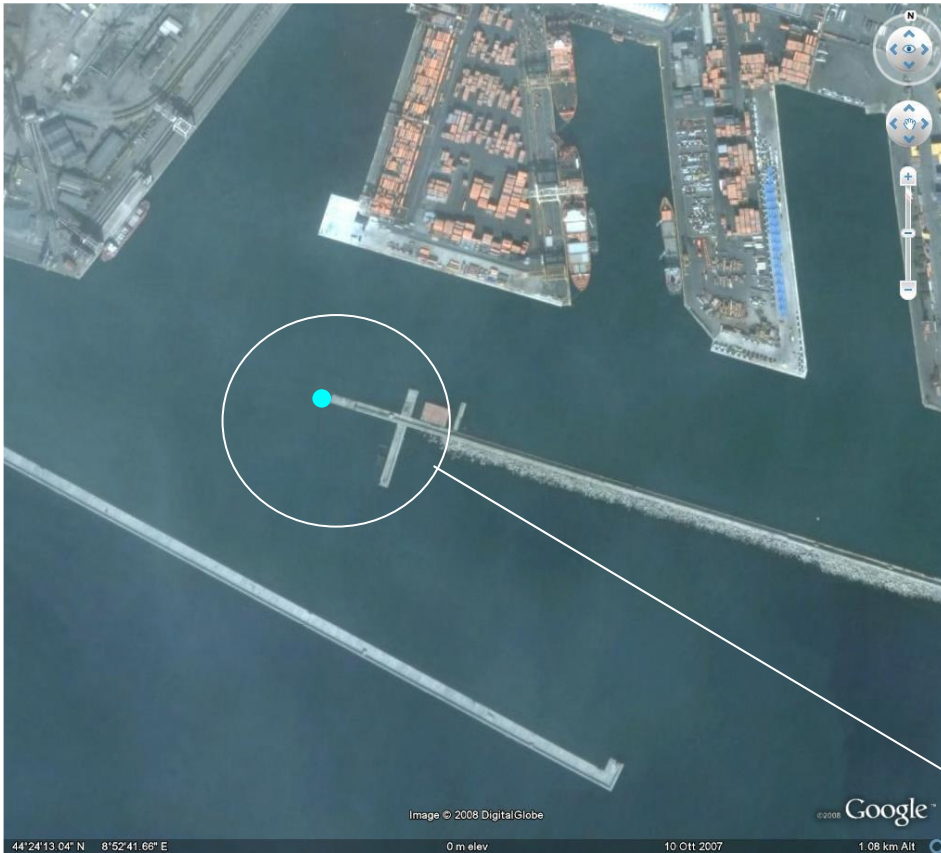


Entrata Est del Porto

Posizione degli strumenti
(punto rosso in alto e linea rossa a destra)

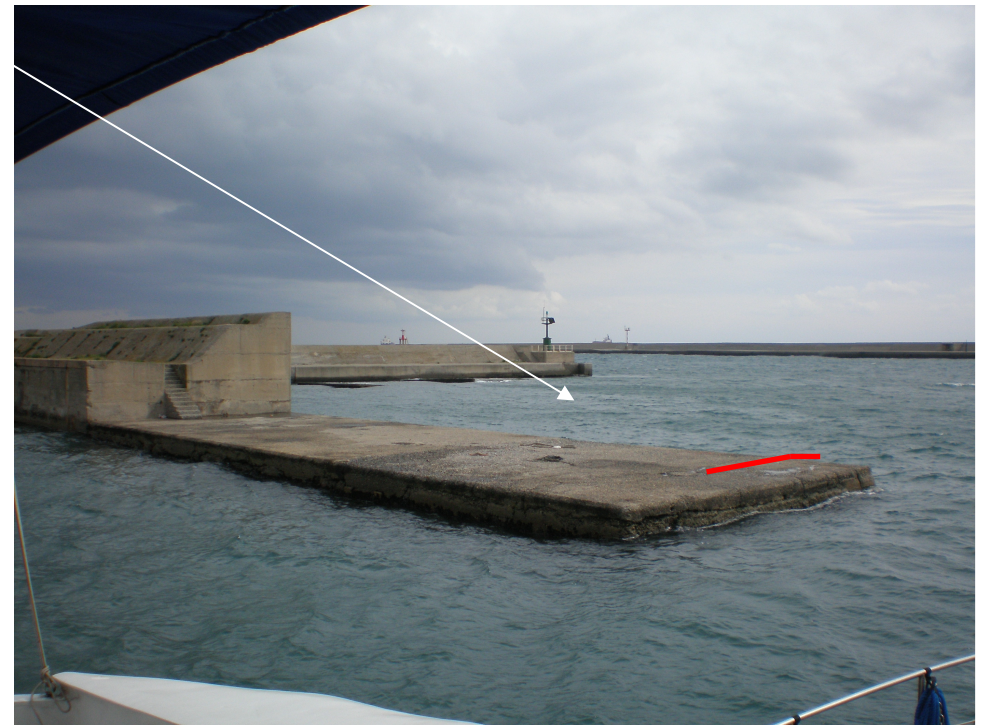


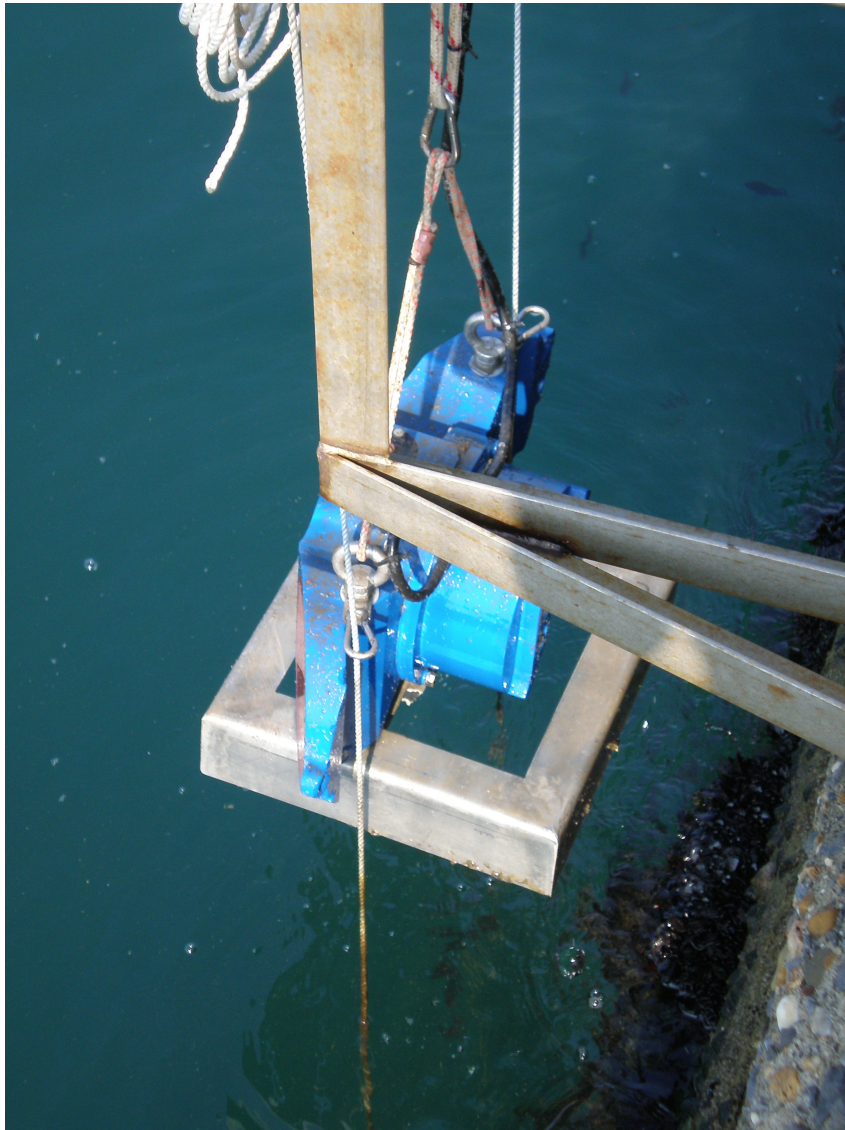
(foto a sinistra : punto rosso; entrata est del porto)



Entrata ovest del porto

Posizione degli strumenti
(in alto punto celeste, e linea rossa a destra)



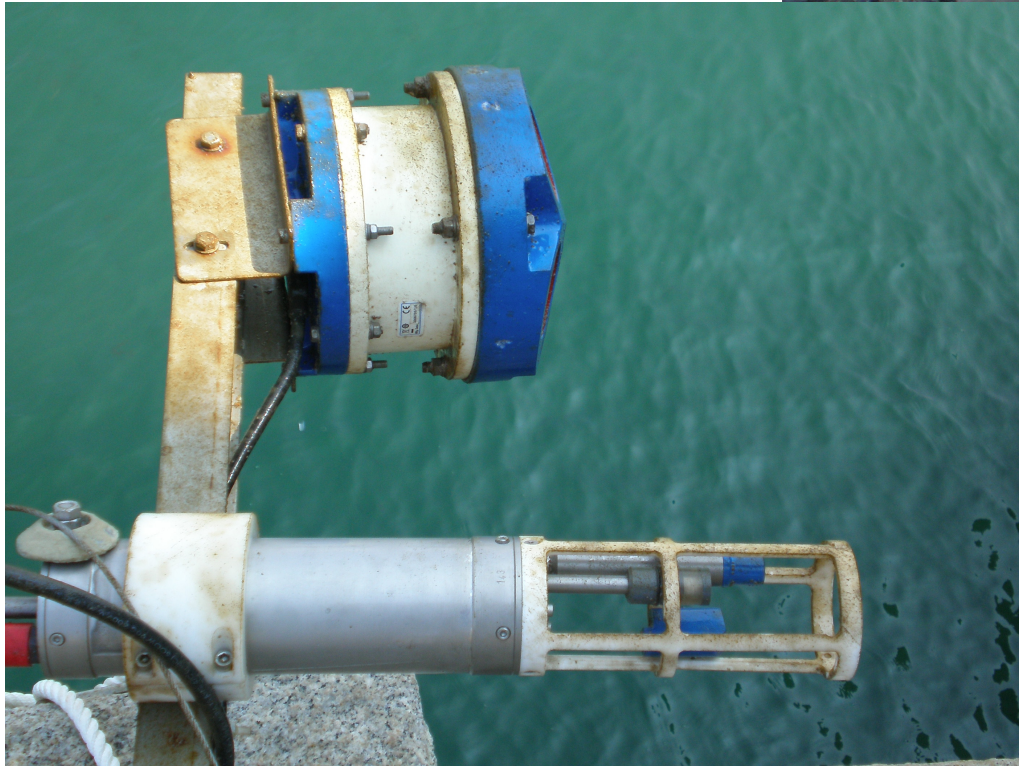
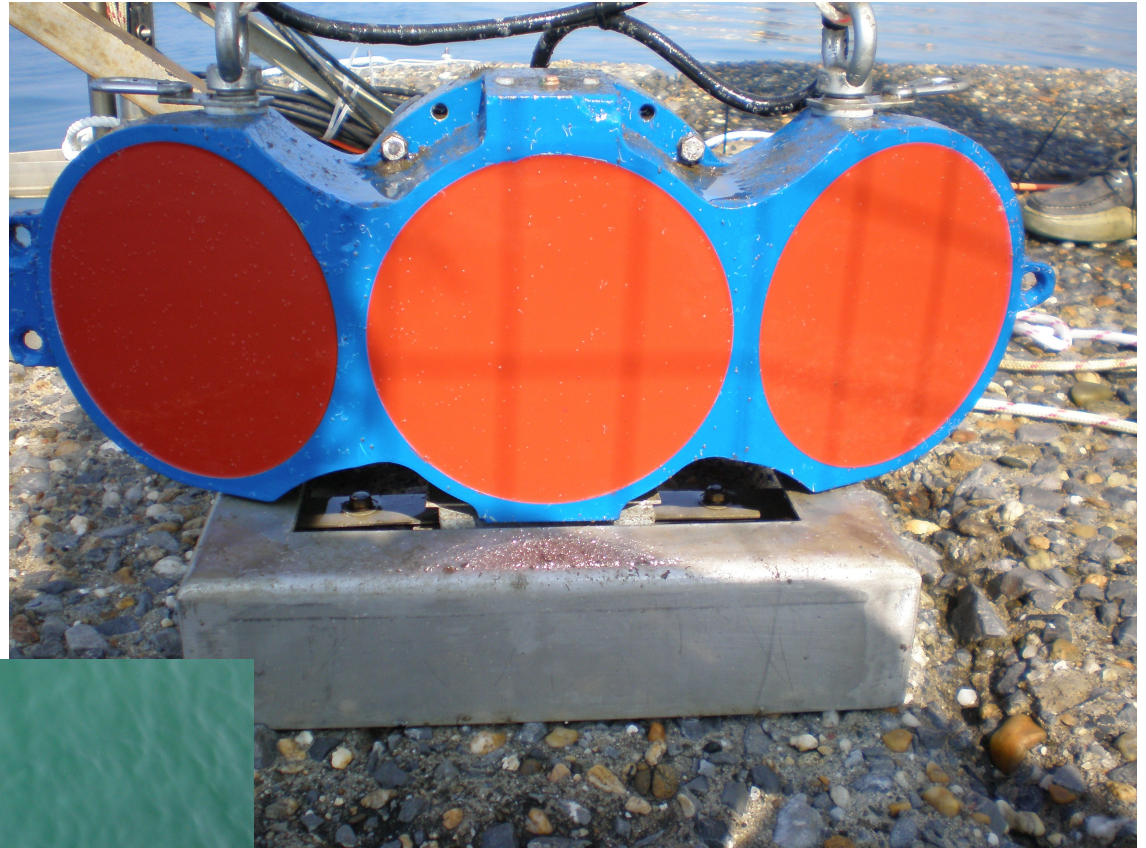


ADCP ORIZZONTALE

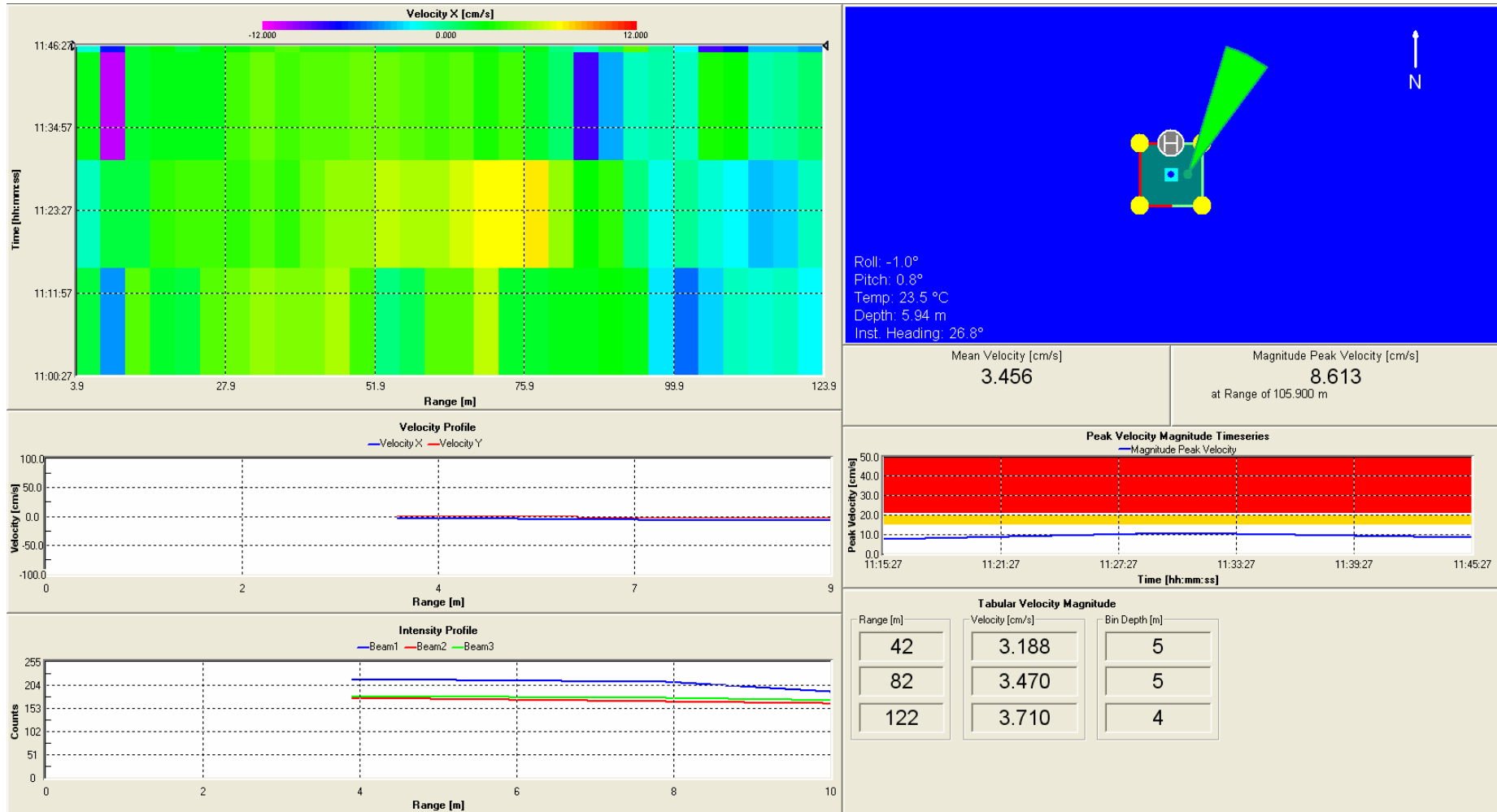
ADCP VERTICALE E CTD



MANUTENZIONE STRUMENTI



Esempio di dati di corrente registrati



...grazie!!!

