



National Research Council  
INSTITUTE OF MARINE SCIENCE

***FABIO TRINCARDI***

[direttore@ismar.cnr.it](mailto:direttore@ismar.cnr.it)  
[f.trincardi@ismar.cnr.it](mailto:f.trincardi@ismar.cnr.it)

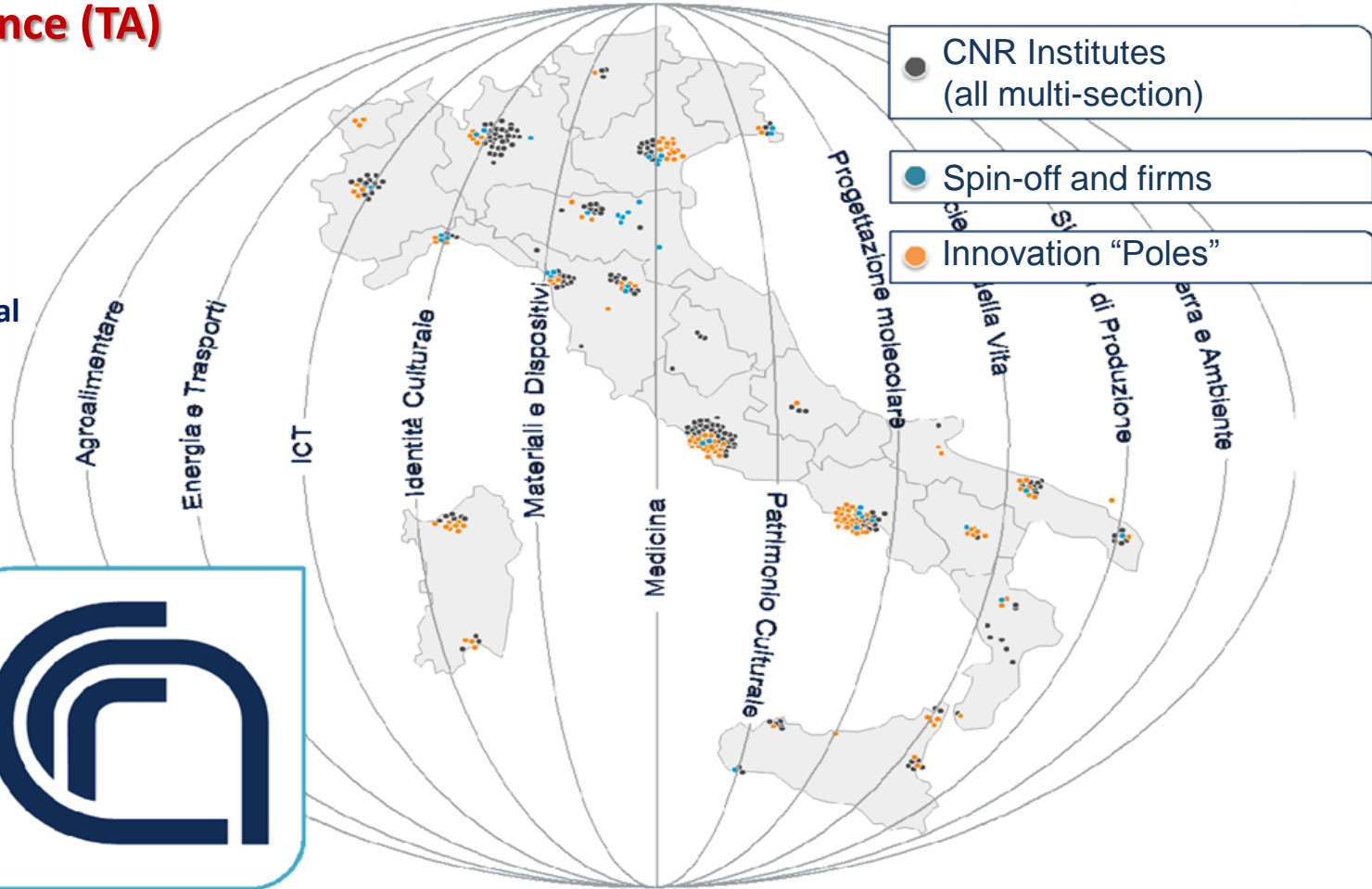
**VENICE 8<sup>th</sup> October 2013, GEBCO Meeting**



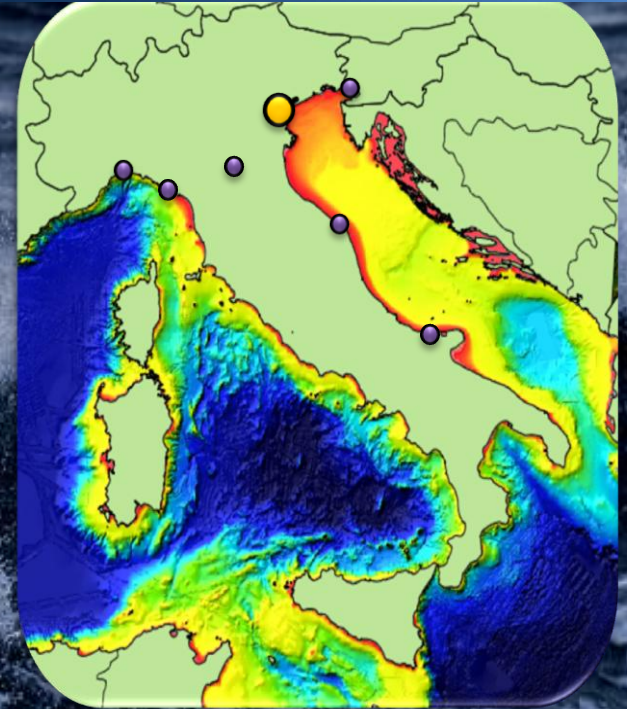
About 11.000 people, turnover of 1,1 billion euro,  
**109 Institutes, 7 Departments**

**Earth System Science (TA)**

- Bio-agro food sciences
- Engineering, ICT, Energy and Transport
- Social Science and Cultural Heritage
- Biomedicine
- Chemistry and Material Technologies
- Physics and Matter Technologies



- **Public Research Institute**
- **Headquarter in Venice and 6 regional sections**
- **180 people**
- **About 60 people in training (PhD, postdoctoral)**
- **About 150 ISI publications each year**



ISMAR was evaluated as the **excellence institute** of the Earth System Science Department of CNR

- **VENEZIA**
- **GENOVA**
- **TRIESTE**
- **LA SPEZIA**
- **BOLOGNA**
- **ANCONA**
- **LESINA**



National Research Council  
**INSTITUTE OF MARINE SCIENCE**



**ARSENALE**



**2010**



**1946**



**RIVA 7 MARTIRI**



Consiglio Nazionale delle Ricerche  
**Istituto di Scienze Marine**

**Sede di Venezia**

**Riva dei 7 Martiri**

***Biblioteca dell' Istituto di Studi Adriatici***



## ISMAR activities

### **Physical and Chemical Oceanography**

(Venezia, Ancona, Bologna, Trieste, La Spezia)

### **Geology e Geophysics**

(Bologna, Venezia)

### **Coastal Systems And Human Impacts**

(All locations)

### **Climate and Paleoclimate**

(Bologna, Venezia, Trieste, La Spezia)

### **Ecosystems and Biogeochemistry**

(Ancona, Venezia, Lesina)

### **Fisheries and Aquaculture**

(Ancona, Lesina)

### **Technology**

(Genova, Ancona, Bologna, La Spezia)





National Research Council  
**INSTITUTE OF MARINE SCIENCE**



**ISMAR's mission is to increase the knowledge of natural processes and help to solve society's problems:**

- **Natural processes**  
(geological, oceanographic, biological), dispersion of sediments and pollutants, ecosystems, productivity of the seas, natural hazards.
- **Mechanisms / effects of global change**  
heating and ocean circulation, acidification, sea level change and coastal erosion, hydrodynamic processes (including polar regions)
- **Human impacts**  
current and pre-industrial pollution, impacts on the coasts and in the deep sea, alien species

# RESEARCH IN THE OCEANS

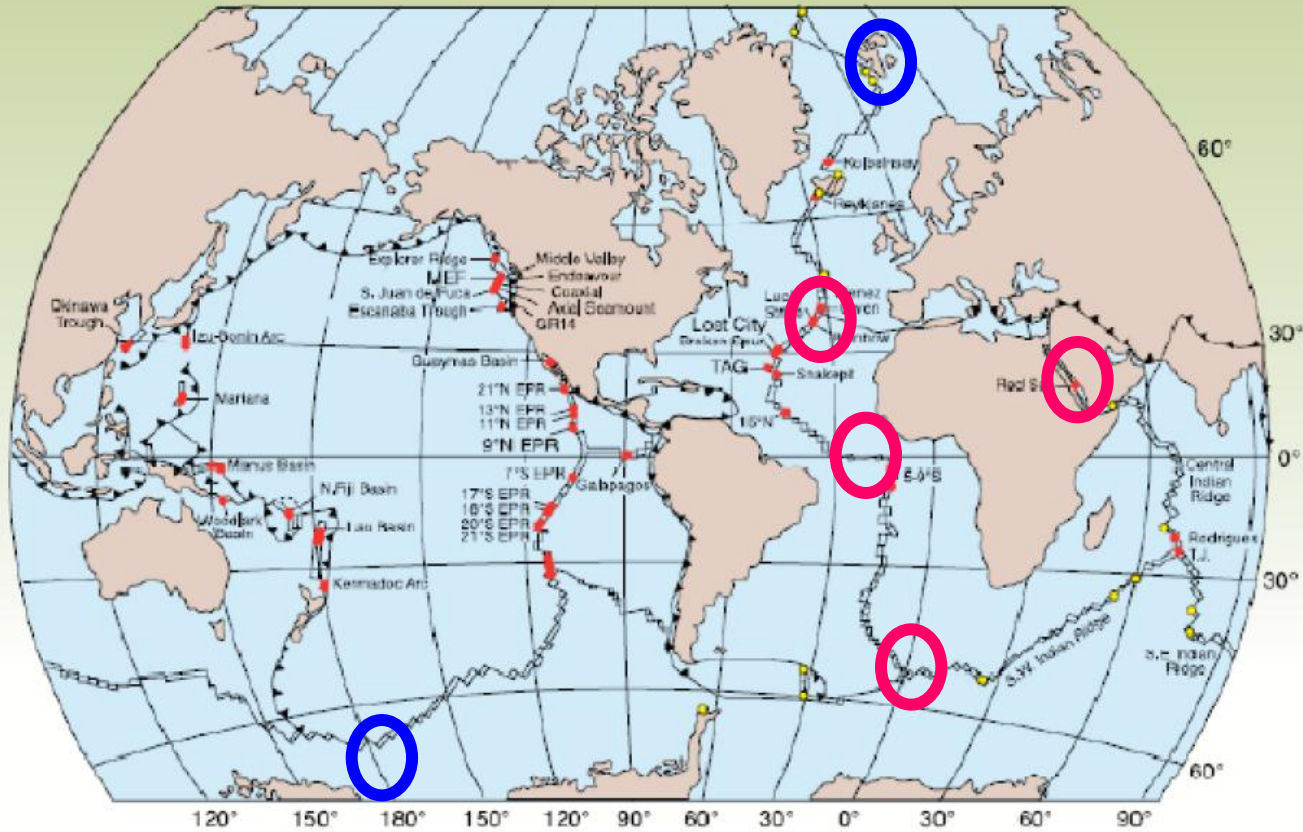
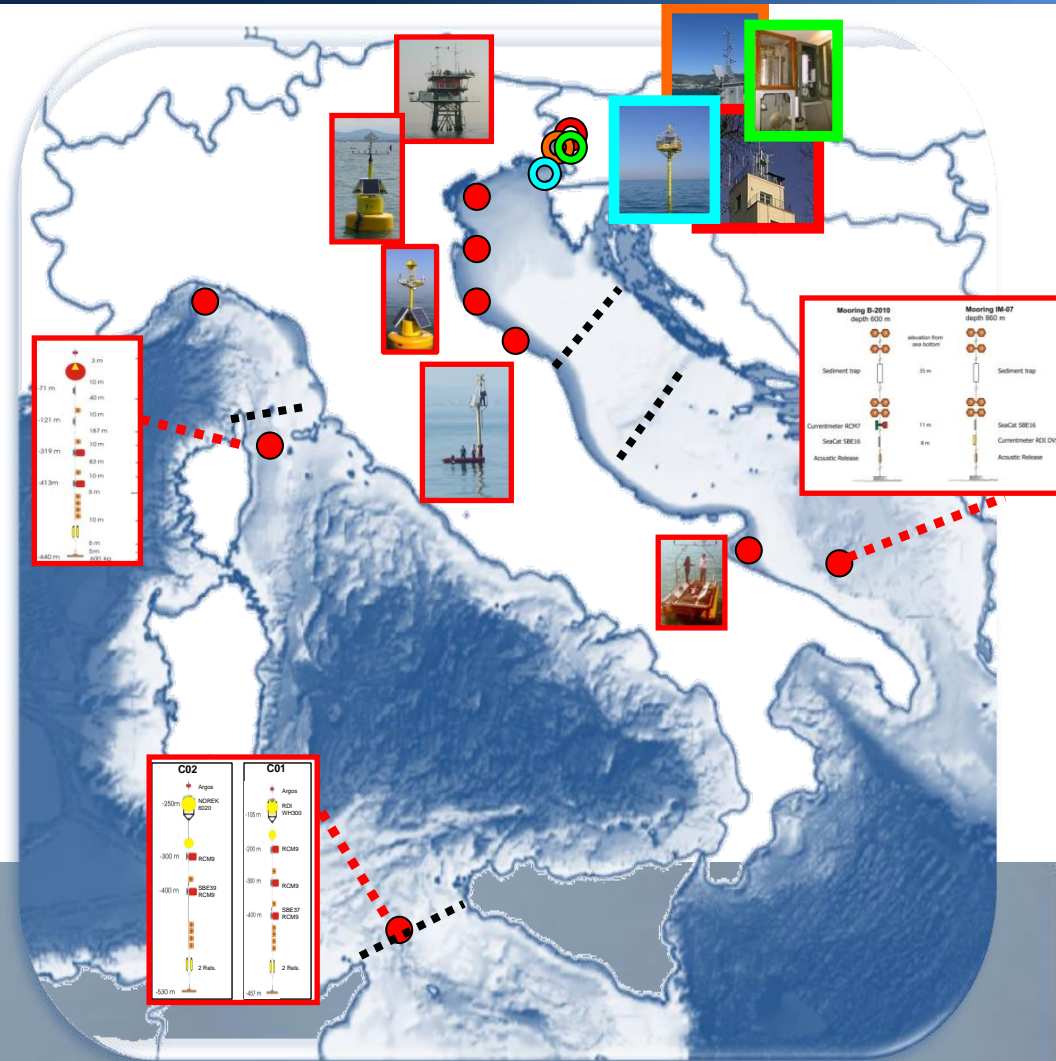


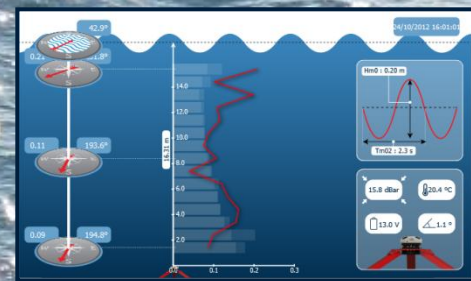
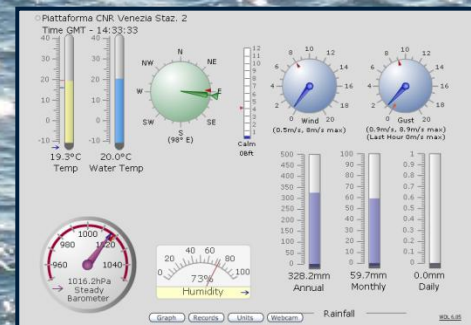
Figure 1. Known sites of hydrothermal venting along mid-ocean ridges, in back-arc basins, rifted arcs, and at submerged island-arc volcanoes (red), and areas of activity as indicated by mid-water chemical anomalies (yellow). EPR= East Pacific Rise, TAG= Trans Atlantic Geotraverse, MEF = Main Endeavour Field, and GR-14 = Sea Cliff hydro thermal field on the northern Gorda Ridge. Figure after Baker et al, 1995; German and Von Damm, 2004; Harrington et al, 2005; Koschinsky et al, 2006



## OBSERVATIONAL NETWORK

- Buoys, platforms, moorings and other fixed sites
- Repeated hydrological transects
- Fishery Observing System
- ILTER stations (North Adriatic, Antarctica, Venice Lagoon)

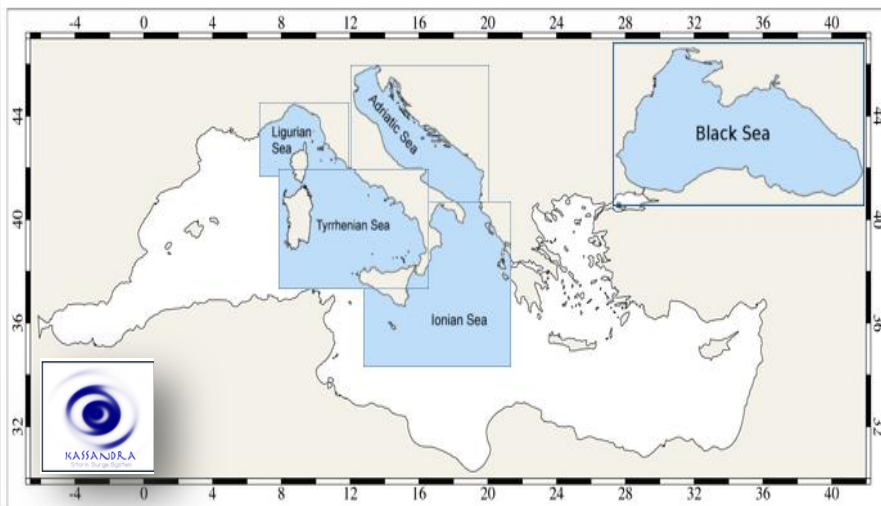




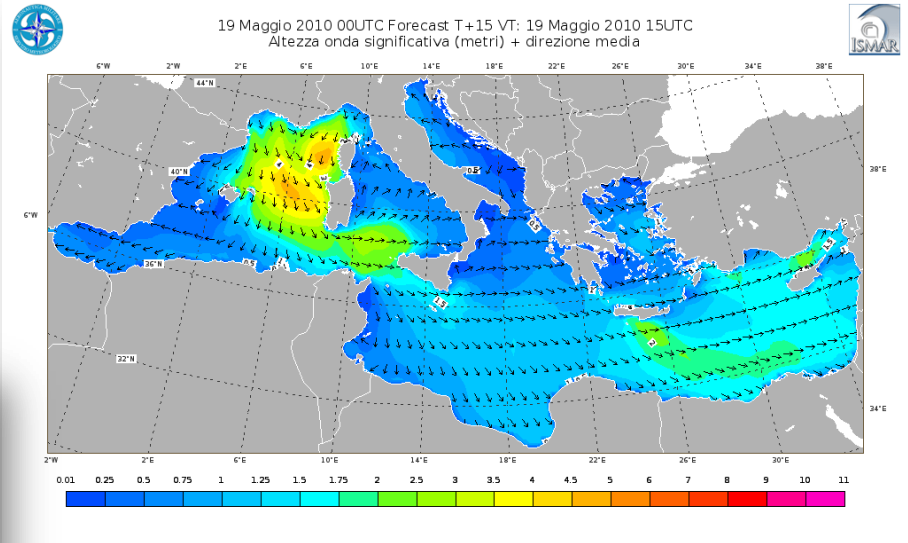
<http://www.ismar.cnr.it/infrastrutture/piattaforma-acqua-alta>

# ISMAR Forecasting systems

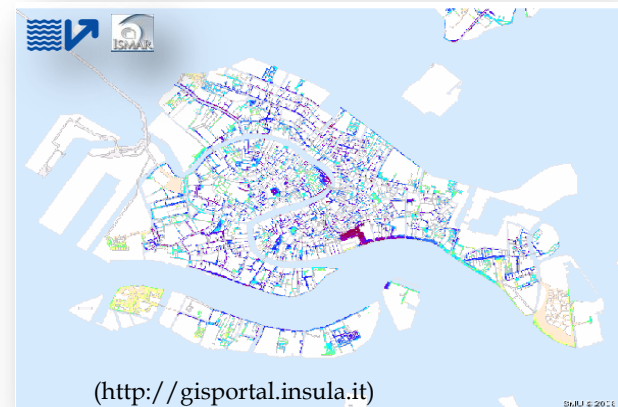
## KASSANDRA WAVES, SEA LEVEL, CURRENTS



## NETTUNO WAVE FORECASTING



## ISMAR -CENTRO MAREE HIGH WATERS IN VENICE



## Some challenges of the coming years ...

Geological mapping and historical evolution of the coastal area (and human impacts)

Study of the oceanographic processes and the impact on the seabed (coast, continental shelf and deep sea)

Oceanographic forecasting models (waves, tides, currents)

Observing sites, long time physical and ecological series

Human impacts on seafloor and water column (from the lagoons to the ocean)

Definition of the geological hazards: identification of structures (3D Seismic Geomorphology), fluids emissions



National Research Council  
**INSTITUTE OF MARINE SCIENCE**



[www.ismar.cnr.it](http://www.ismar.cnr.it)

# RAPID ENVIRONMENTAL ASSESSMENTS



