



UNIVERSITÀ  
DEGLI STUDI DI TRIESTE



ISTITUTO NAZIONALE  
di OCEANOGRAFIA e di GEOFISICA Sperimentale

# 18<sup>th</sup> International Symposium on Geodynamics and Earth Tides

Intelligent Earth system sensing,  
scientific enquiry and discovery

M.Cristina Pedicchio  
OGS President



INTERNATIONAL ASSOCIATION OF GEODESY  
PERMANENT COMMISSION ON EARTH TIDES

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## THIRD INTERNATIONAL SYMPOSIUM ON EARTH TIDES

*organized by*

*the University of Trieste and the Osservatorio Geofisico Sperimentale-Trieste*

*Trieste, July 6-11 1959*

### EXECUTIVE COMMITTEE:

President: R. TOMASCHEK (Germany)

Members: Y.D. BOULANGER (U.S.S.R.) - W.D. LAMBERT (U.S.A.)

A. MARUSSI (Italy) - P. MELCHIOR (Belgium) - C. MORELLI (Italy)

# Friuli Venezia Giulia Science System

- ✓ Science and technology hub
- ✓ Large community of Italian and foreign scientists
- ✓ At the heart of the enlarged Europe
- ✓ On the Adriatic and Mediterranean Sea



# Trieste Scientific Institutions



REGIONE AUTONOMA  
FRIULI VENEZIA GIULIA

**coordinamento  
enti ricerca**  
FRIULI VENEZIA GIULIA

DISTRETTO TECNOLOGICO NAVALE E NAUTICO

**DITENAVE**

FRIULI VENEZIA GIULIA

**AREA**

SciencePark

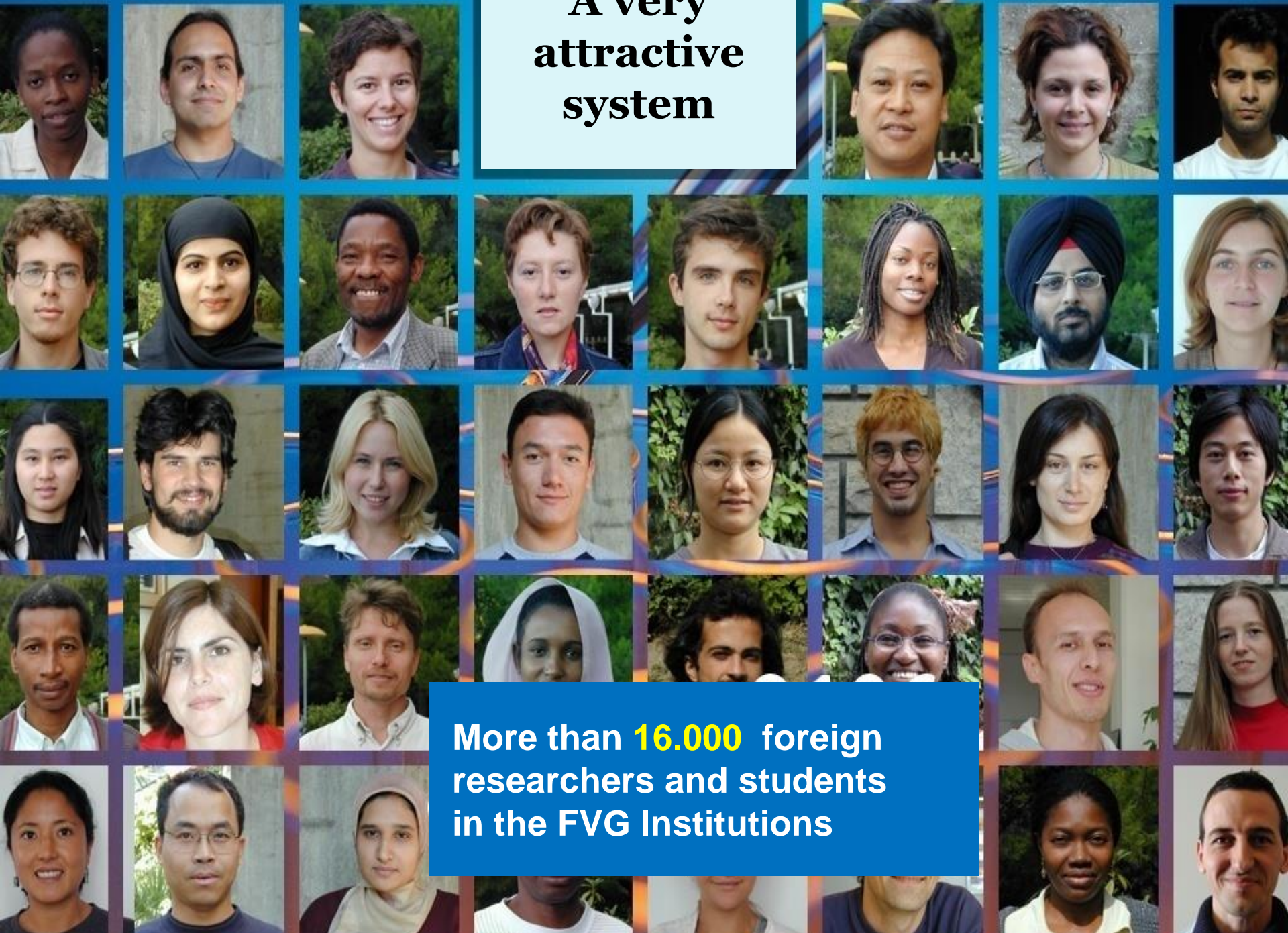


**DIA**net  
danube initiative &  
alps adriatic network



**TS**  
TRIESTE CITTÀ DELLA CONOSCENZA  
TRIESTE CITY OF KNOWLEDGE

**A very  
attractive  
system**



**More than 16.000 foreign  
researchers and students  
in the FVG Institutions**

# Elettra Synchrotron Laboratory – Area Science Park



# International Center for Theoretical Physics



The Abdus Salam  
International Centre  
for Theoretical Physics  
50th Anniversary 1964–2014



Research ▼

Programmes ▼

Scientific Calendar



Celebrating 50 years of scientific excellence





# OGS – National Institute of Oceanography and Experimental Geophysics

OGS' roots date back to the **School of Astronomy and Navigation** founded in Trieste by empress Maria Theresa of Austria in 1753.



# OGS: four Research Sections

## Infrastructures - Geophysics - Seismology - Oceanography



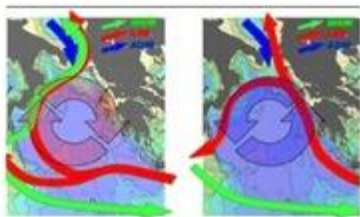
ISTITUTO NAZIONALE  
DI OCEANOGRAFIA e DI GEOFISICA SPERIMENTALE

HOME | L'ENTE | LA RICERCA | PERSONE | LABORATORI | TRASFERIMENTO TECNOLOGICO | OPPORTUNITÀ

## Earth Sustainability Research



Oceanografia



Oceanografia biologica, chimica, fisica ed operativa

Geofisica



Geoscienze, Geofisica di pozzo, modellazione ed inversione

Sismologia



Reti sismiche, sismogenesi, ingegneria sismica, GPS RTK

Infrastrutture



Nave da ricerca, Geofisica aerea, Geofisica a terra, gestione dati



# OGS: Services for industry

## Safety of large infrastructures

- ✓ Trans-Adriatic Pipeline
- ✓ Vandellos II nuclear power plant
- ✓ Seismic hazard of Italian dams
- ✓ Harbour in Cameroun
- ✓ Geological storage of fluids (methane and CO<sub>2</sub>)



# OGS: Services for civil defence and protection of the environment

- ✓ Isola del Giglio
- ✓ Earthquake Emilia
- ✓ Trieste harbour
- ✓ Polluted natural sites (Laguna di Grado-Marano, Trieste)



# OGS policy and strategies

- ✓ **Integration** of research, innovation, education;
- ✓ Multidisciplinary and multisetorial activities (public - private);
- ✓ Attention to the Social Challenges: **Blue Growth and Climate Change , Risk Management (earthquake) as main priorities;**
- ✓ **Strong international collaboration;**
- ✓ Importance of **Research Infrastructures;**
- ✓ **Human resources**

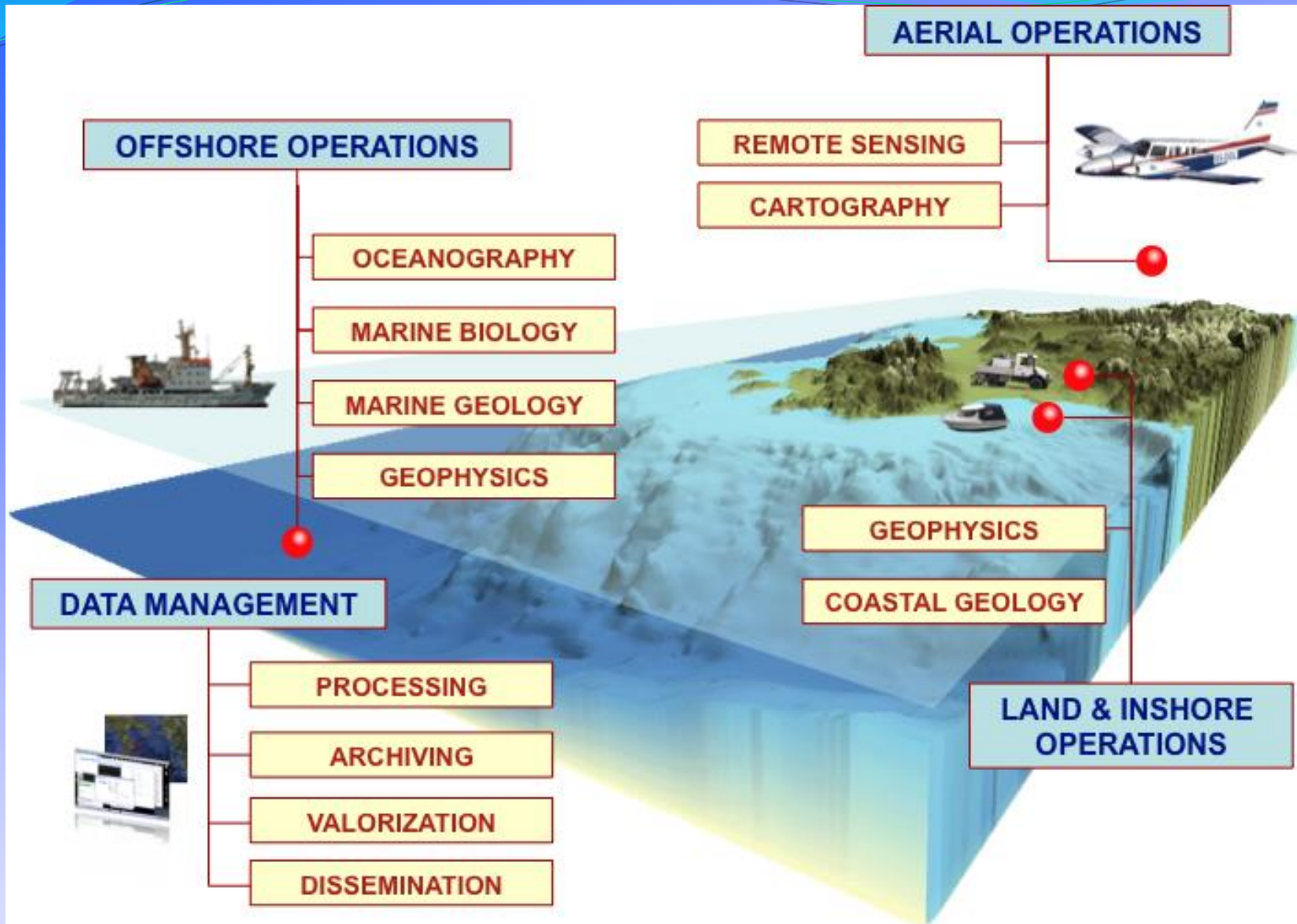
# OGS Priority: Research Infrastructures



# Infrastructures - Research Vessel OGS-Explora



# Infrastructures



# ESFRI Research Infrastructures (Europee)

✓ Euroargo – Infrastructure for climate change research and operational Oceanography (floats, gliders... ) Eric signed in 2014



✓ Eccsel – European Carbon Dioxide Capture and Storage Laboratory

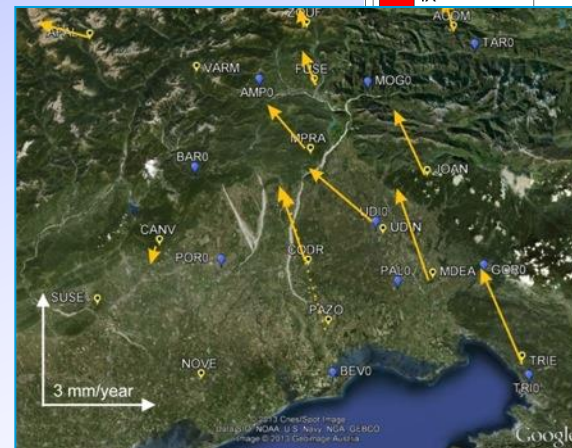
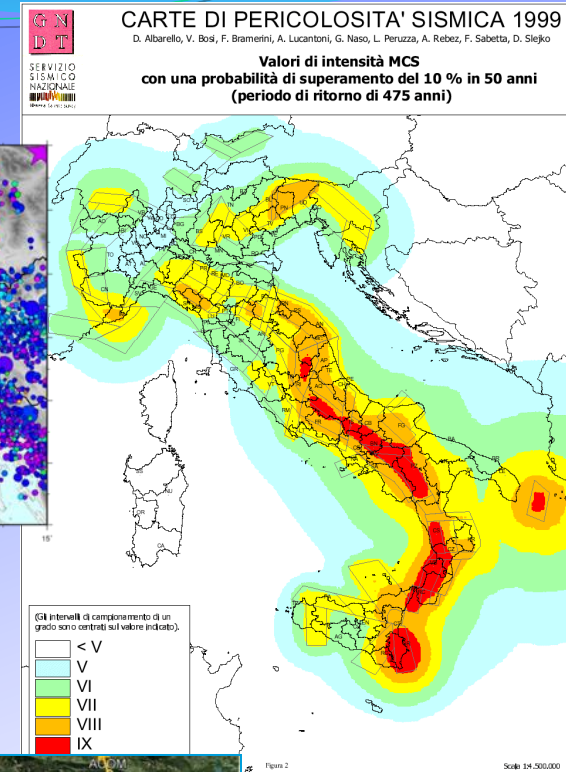
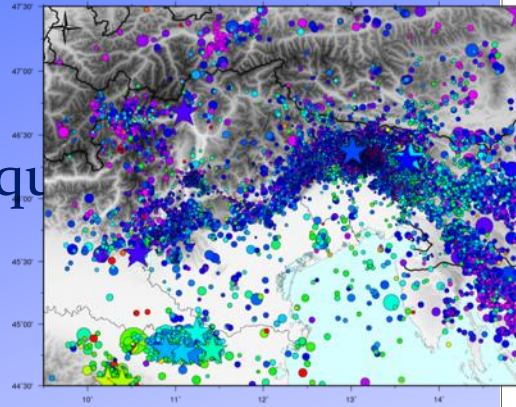


✓ Prace – HPC e-infrastructure



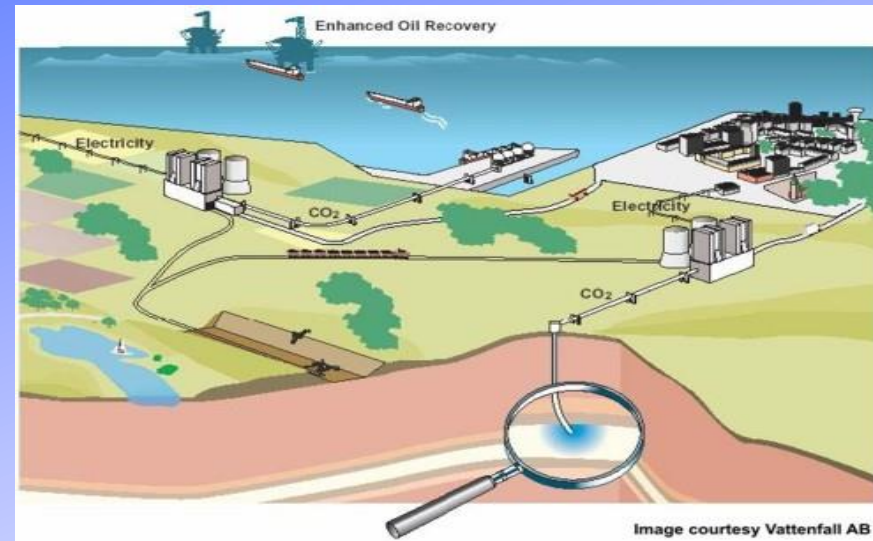
# Seismology

- ✓ Seismic monitoring and service of real-time seismic alert
- ✓ Research in the fields of earthquake ground shaking simulation, engineering seismology, site amplification
- ✓ Education and dissemination to schools and general public
- ✓ Monitoring of public and private buildings (schools, hospitals, energy infrastructures, factories...)
- ✓ Risk management

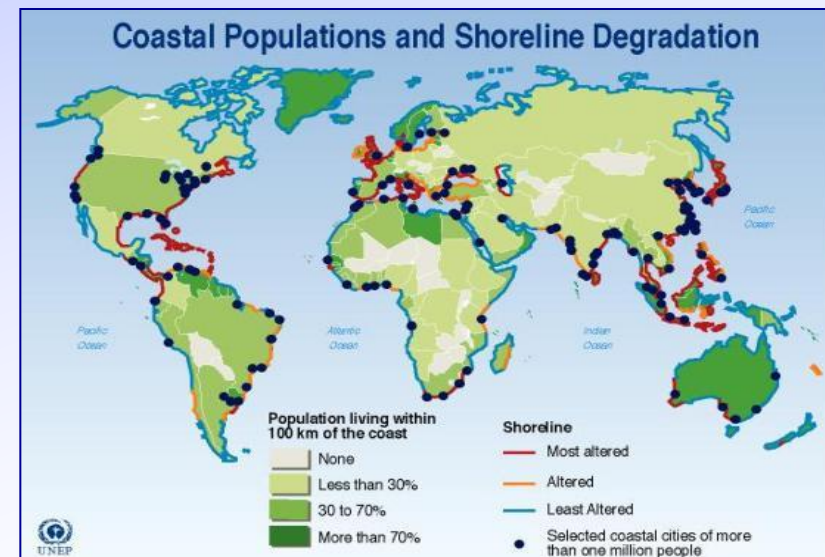
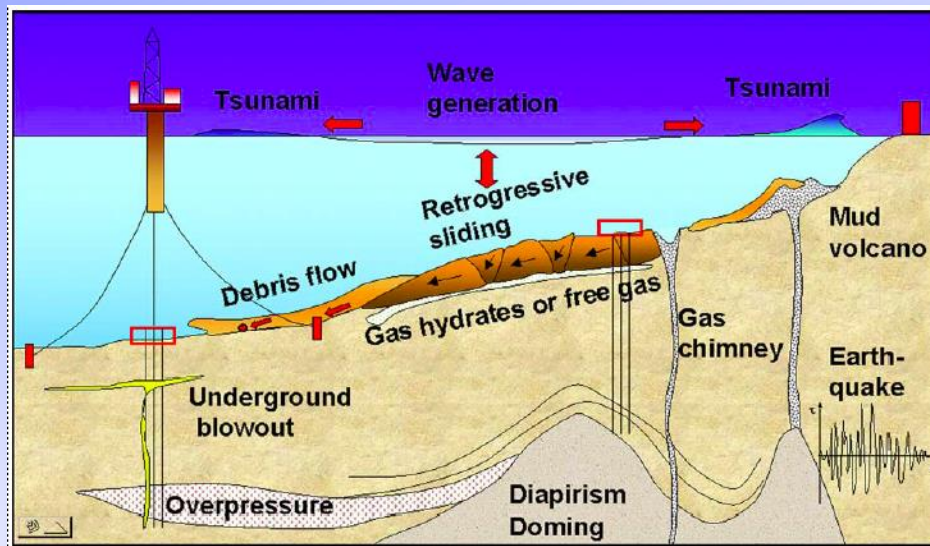




## ✓ Assessing Capacity for Geological Storage of Carbon Dioxide



## ✓ Submarine geohazards



# Human resources and talents attraction



✓ EC recognition of “HR excellence in Research”



# High Performance Computing - Training and Research for Earth Sciences

## HPC-TRES

Calls for:

- ☐ 3 Scholarships
- ☐ 8 Research grants

OGS-CINECA Research Program in fields related to various thematic lines of modelling of Earth System (atmosphere, hydrosphere, lithosphere and biosphere) and numerical methods, the latter considered a transverse component for strategic modelling in collaboration with:

ICTP – Abdus Salam International Center for Theoretical Physics, Trieste

CMCC – Centro Euro-Mediterraneo sui Cambiamenti Climatici, Venezia

INGV – Sezione di Pisa

CNR – Istituto di Geoscienze e Georisorse (IGG)- Unità Organizzativa di Supporto (U.O.S.) di Torino





Training and Research in Italian Laboratories

# TRIL

Joint project OGS-ICTP

During the period 1985-2013, 49 fellows (13 females and 36 males) from 26 countries have been granted TRIL fellowships and supported by OGS. Two fellows from Cuba were hosted by OGS-CRS. Presently a Turkish PhD student is hosted by OGS-GEO.

<http://www.ictp.it/tril>

# International Ph.D. Program

## ESFM

Earth Science and Fluid Mechanics

The University of Trieste  
(UniTS)

The National Institute for Oceanography and Applied Geophysics  
(OGS)

The Abdus Salam International Center for Theoretical Physics  
(ICTP)

**<http://phdfluidmechanics.appspot.com/>**

# Trieste a city of Science



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