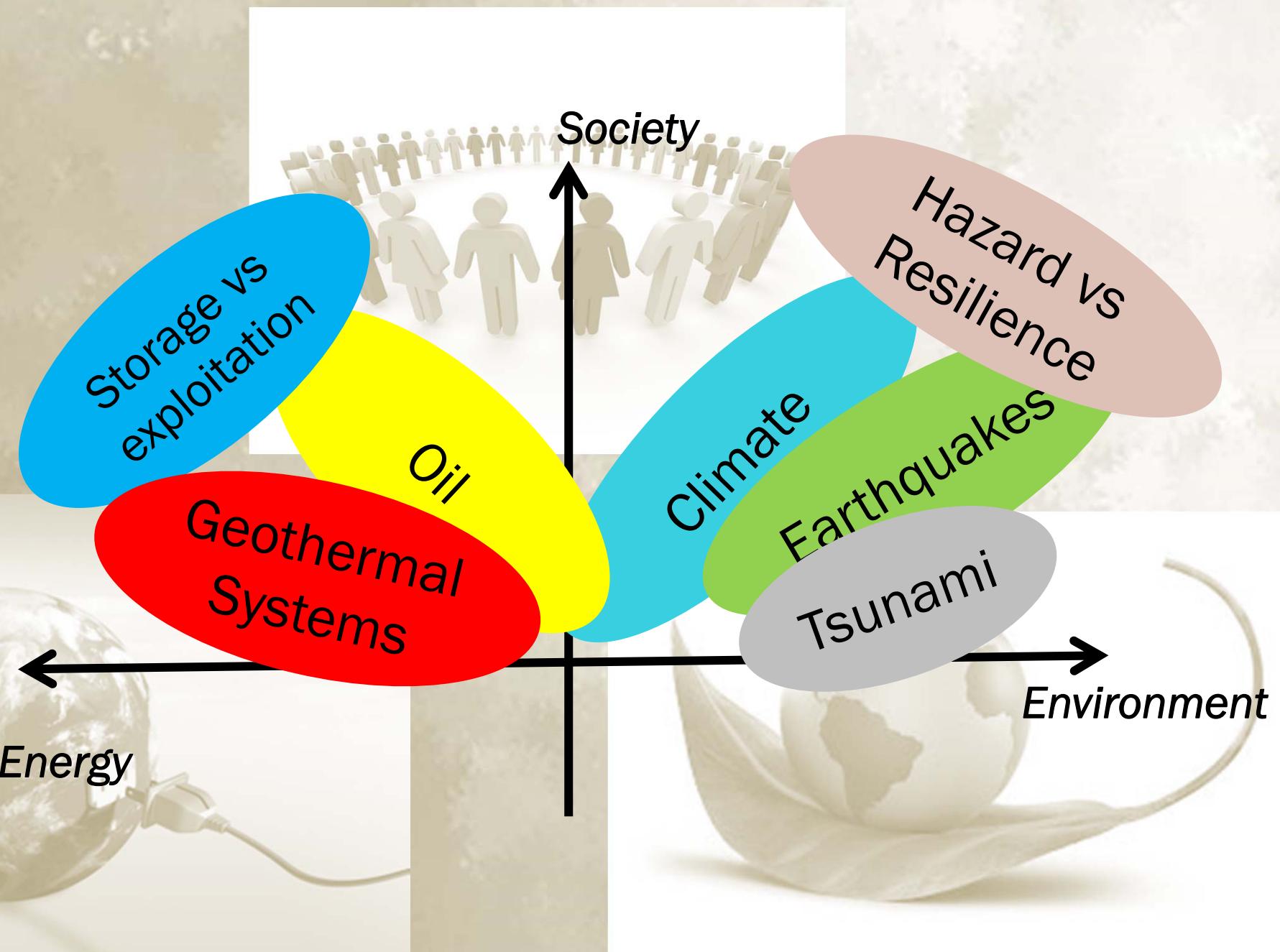


UNIVERSITÀ DI NAPOLI “FEDERICO II”
DIPARTIMENTO DI FISICA

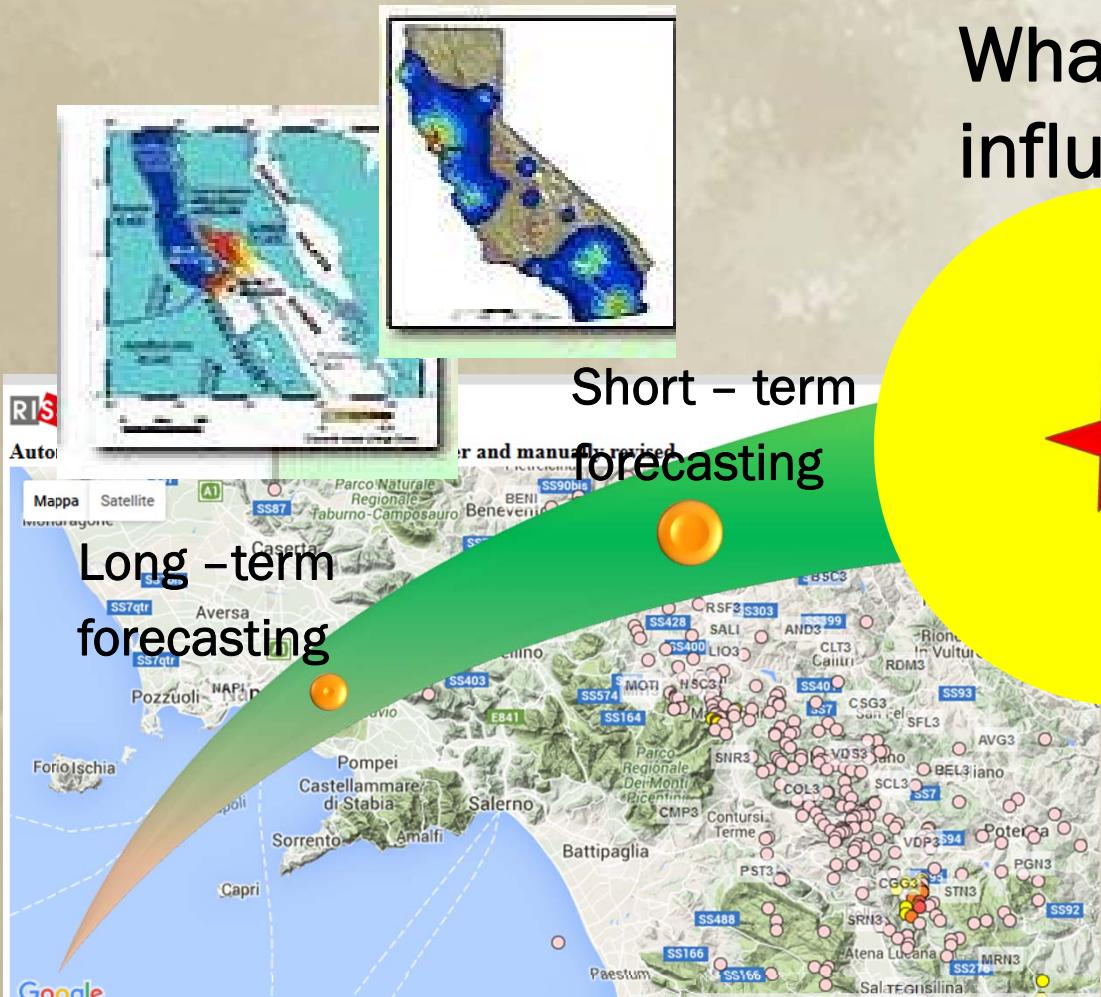
**Geofisica:
didattica e ricerca**

**Gaetano Festa
festa@na.infn.it**

DEVELOPMENT – RESEARCH AXES

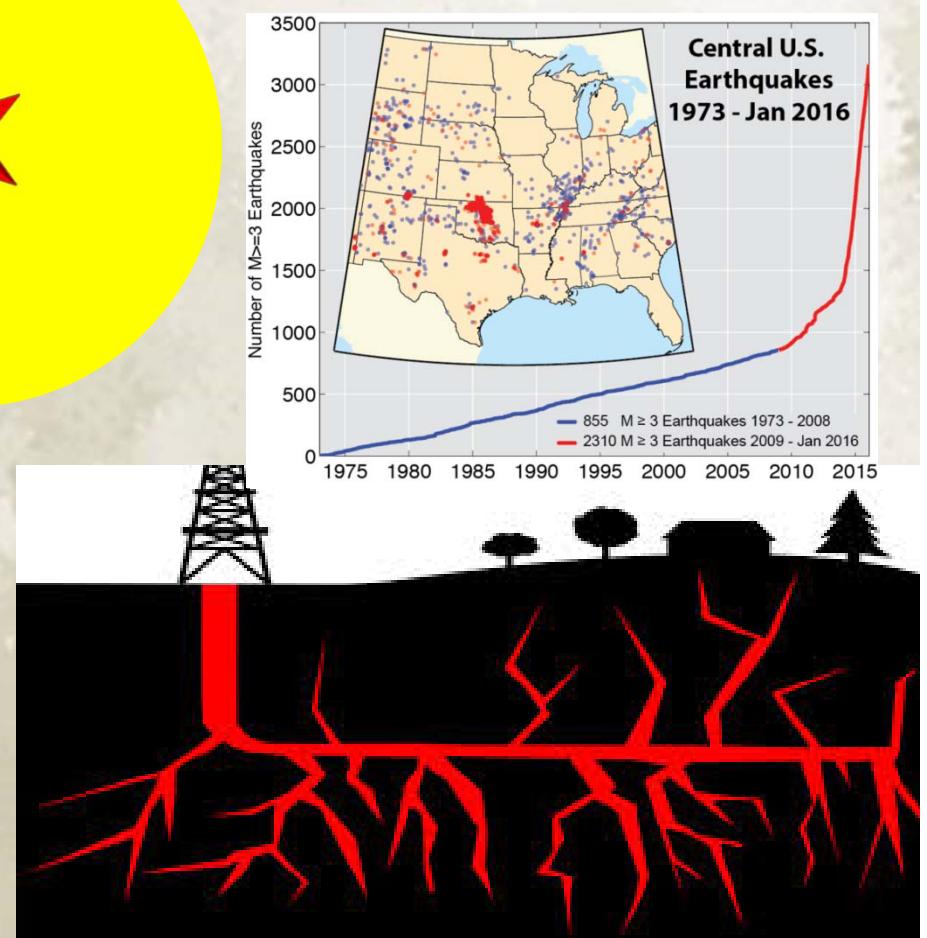


GRAND CHALLENGES IN EARTH PHYSICS: SEISMOLOGY



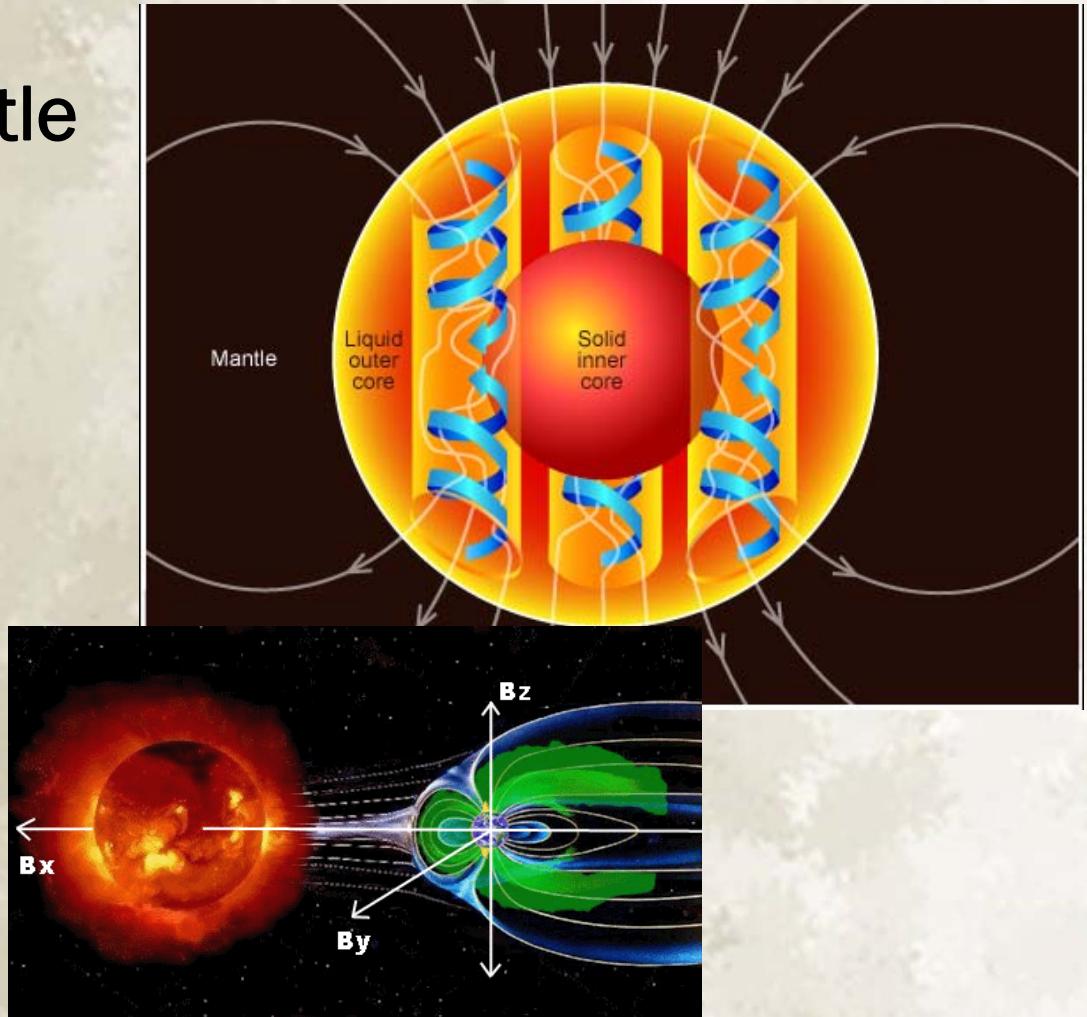
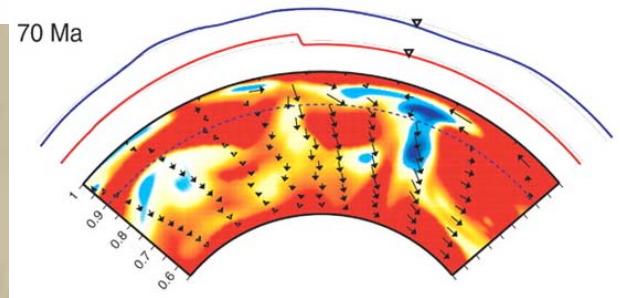
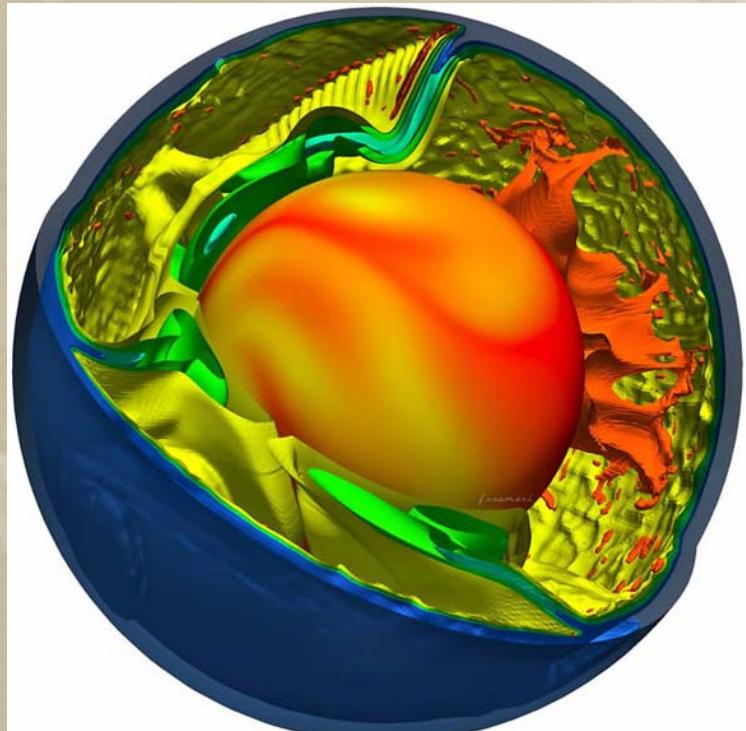
When the next ?

What is the short to long-term influence of energy exploitation ?



GRAND CHALLENGES IN EARTH PHYSICS: DEEP EARTH

What does control the mantle dynamics ?

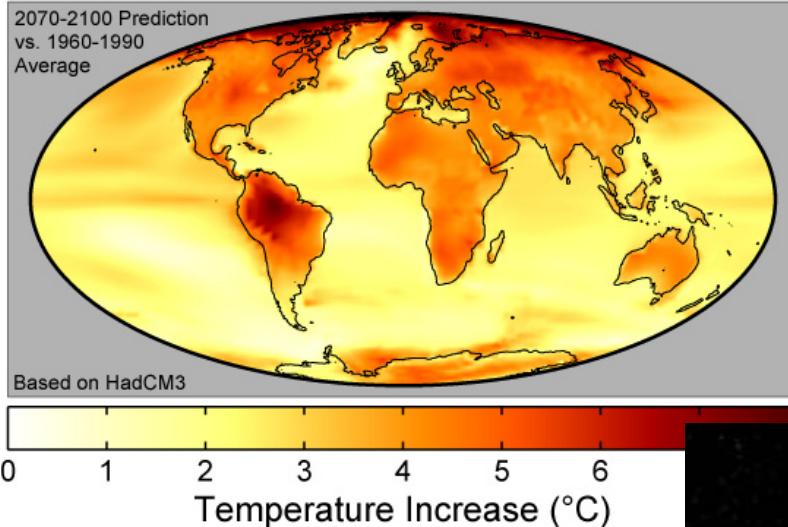


Geodynamo beyond the inner core

GRAND CHALLENGES IN EARTH PHYSICS: ATMOSPHERE

Scale interaction
weather and climate

Global Warming Predictions



Extreme events



Data assimilation and
remote sensing

CURRICULUM

Mecanica continuo



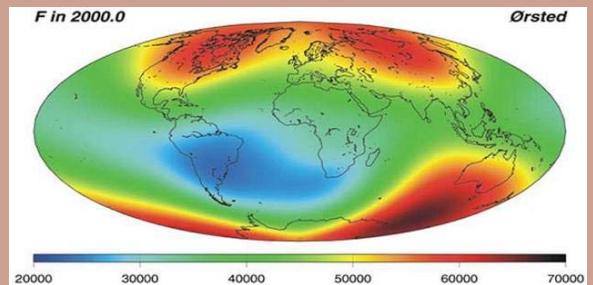
atmosfera,
clima

Modelli

$$\frac{\partial \mathbf{v}}{\partial t} + \mathbf{v} \cdot \nabla \mathbf{v} + 2(\vec{\Omega} \times \mathbf{v}) + 2\vec{\Omega} \times \vec{\Omega} \times \mathbf{r} = -\frac{\nabla P}{\rho_0} + \alpha T \mathbf{g} + \frac{1}{\rho_0} \mathbf{J} \times \mathbf{B} + \nu \nabla^2 \mathbf{v}$$

Metodi inversi

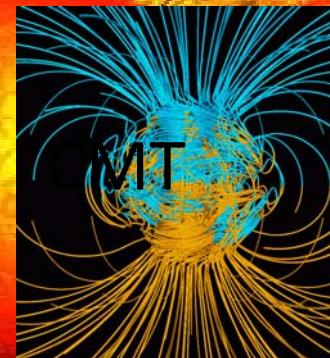
Dati



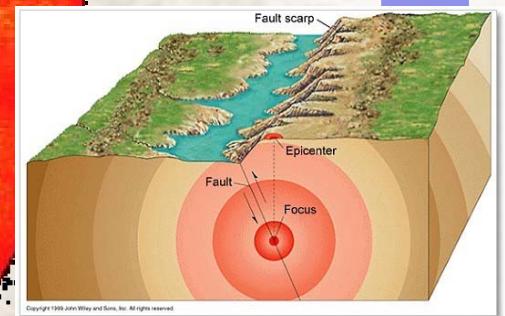
F. Terra
e Atmosfera

Sismologia

Analisi dati



CMT



terremoti
geodinamica

PERCORSO FORMATIVO

	I Anno	II Anno
I Semestre	Laboratorio di Fisica (10) Elettrodinamica classica (9) Meccanica del continuo	Sismologia Esame a scelta
II Semestre	Meccanica statistica (9) Fisica della Terra e dell'atmosfera Metodi inversi Esame affine	Tesi (42)

ATTIVITÀ DEL GRUPPO DI SISMOLOGIA

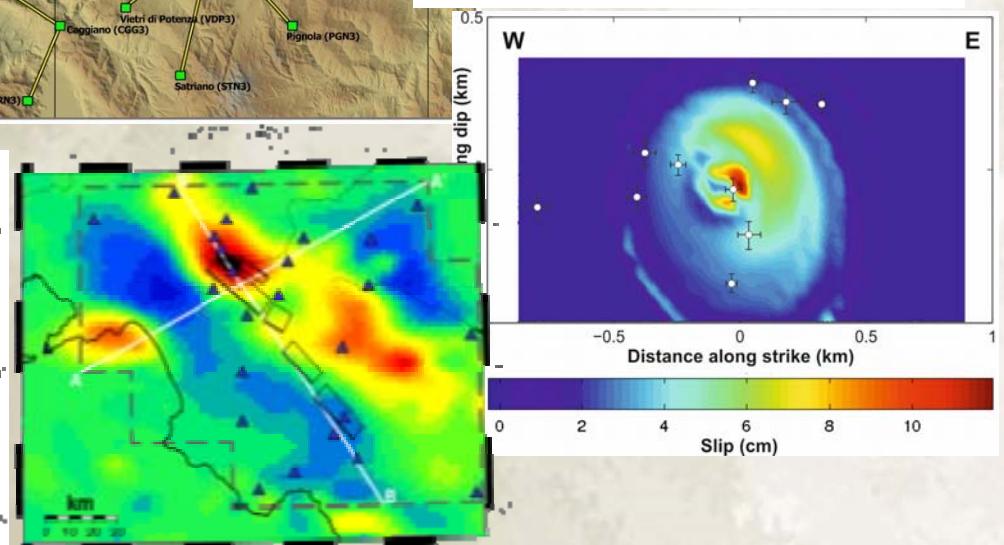
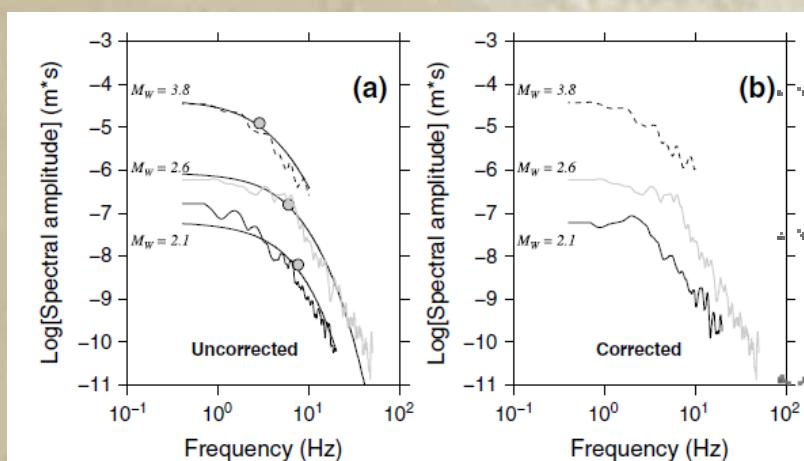
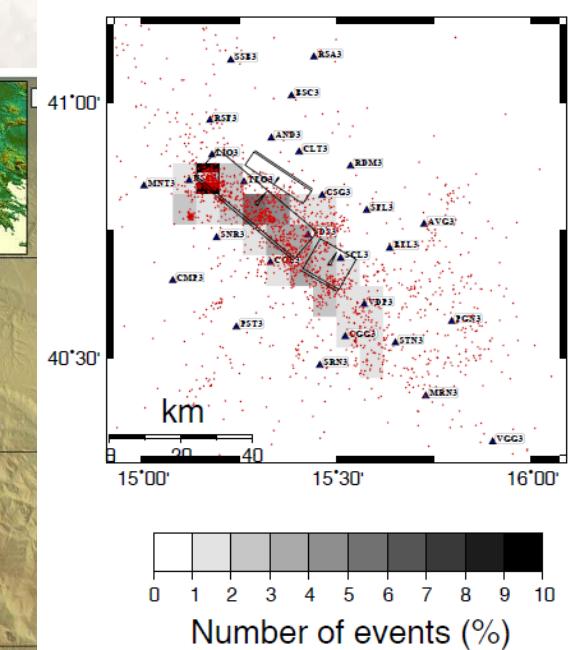
- prof. Aldo Zollo
- dott. Antonio Emolo
- dott. Gaetano Festa
- dott. Matteo Picozzi
- dott. Guido Russo



Unità di Ricerca in Sismologia
Sperimentale e Computazionale

<http://www.risclab.unina.it>

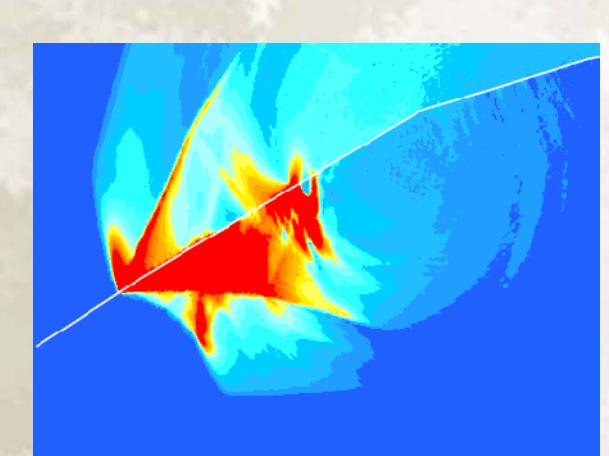
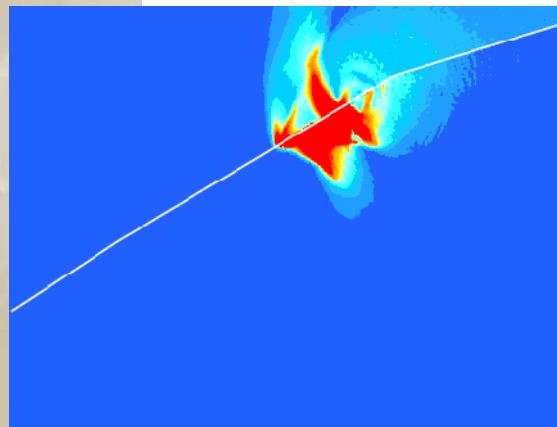
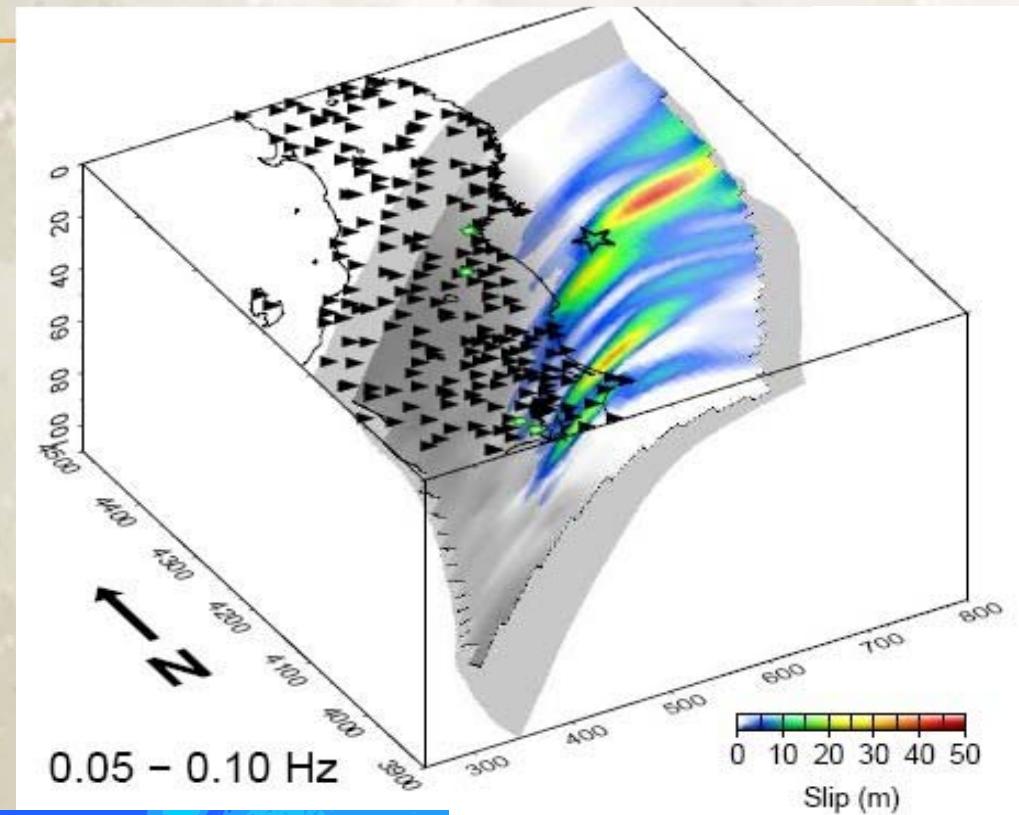
RETE SISMICA ISNET



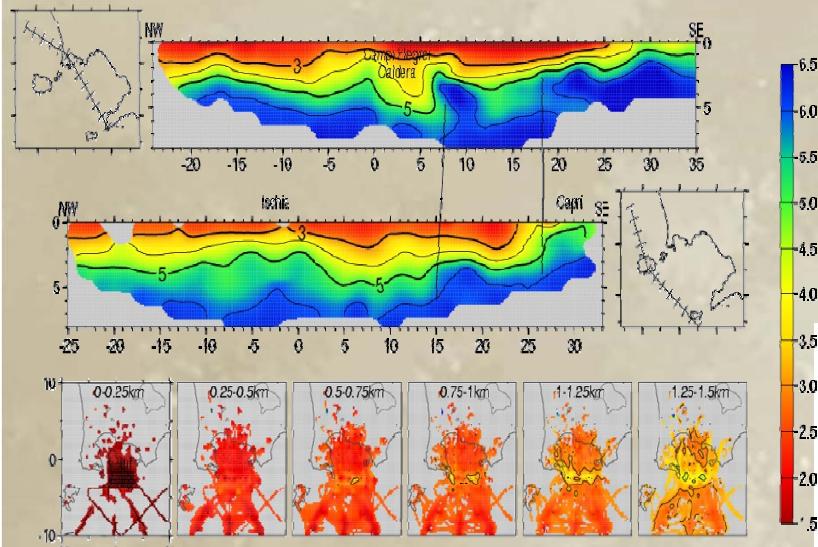
SORGENTE SISMICA : SIMULAZIONI E INVERSIONI

Studio dei processi di generazione dei terremoti mediante simulazioni numeriche che riproducono la propagazione della frattura

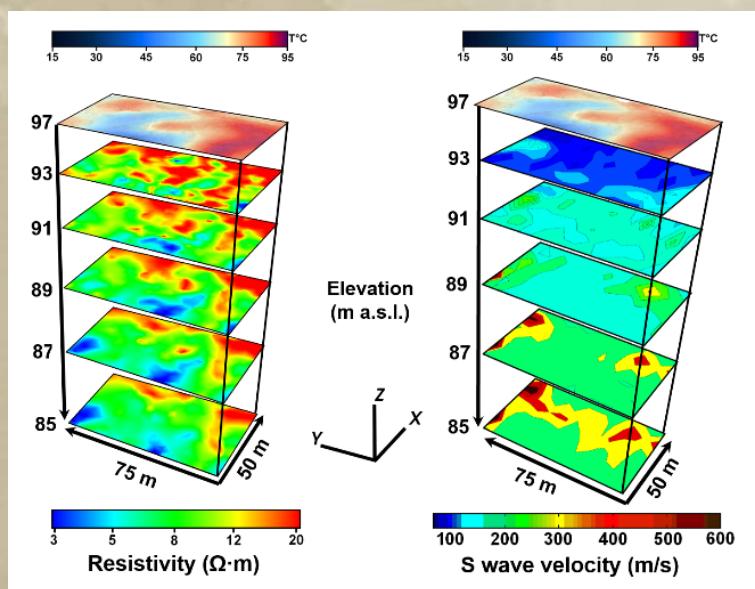
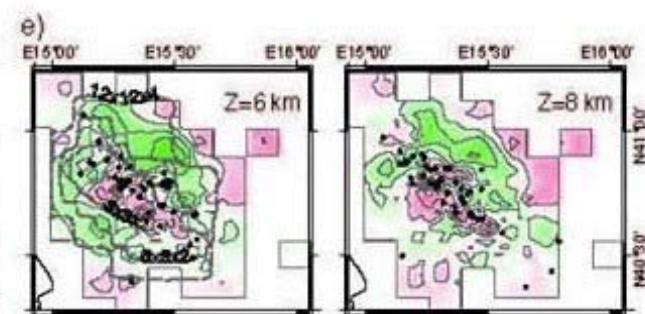
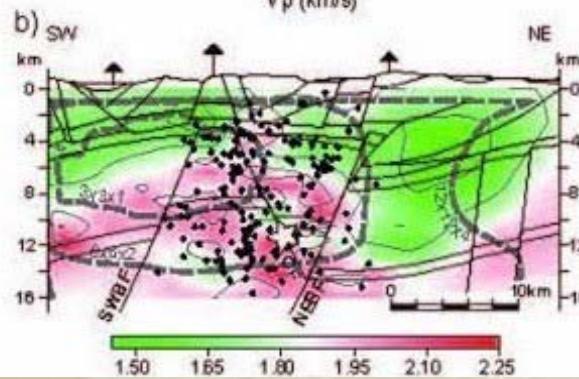
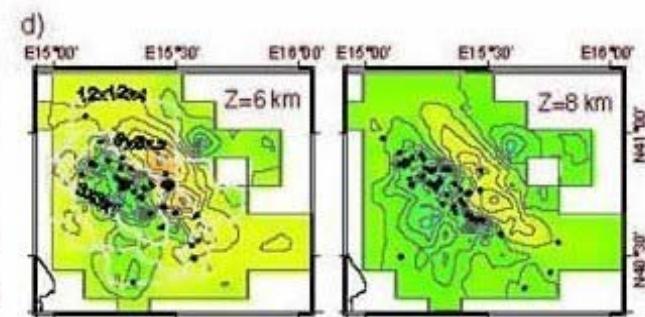
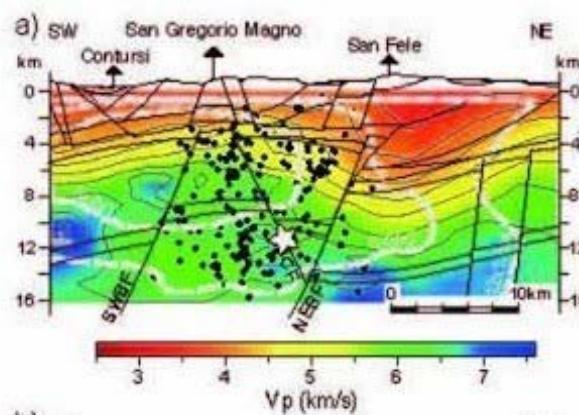
terremoto di Tohoku-Oki
11 Marzo 2011



IMAGING



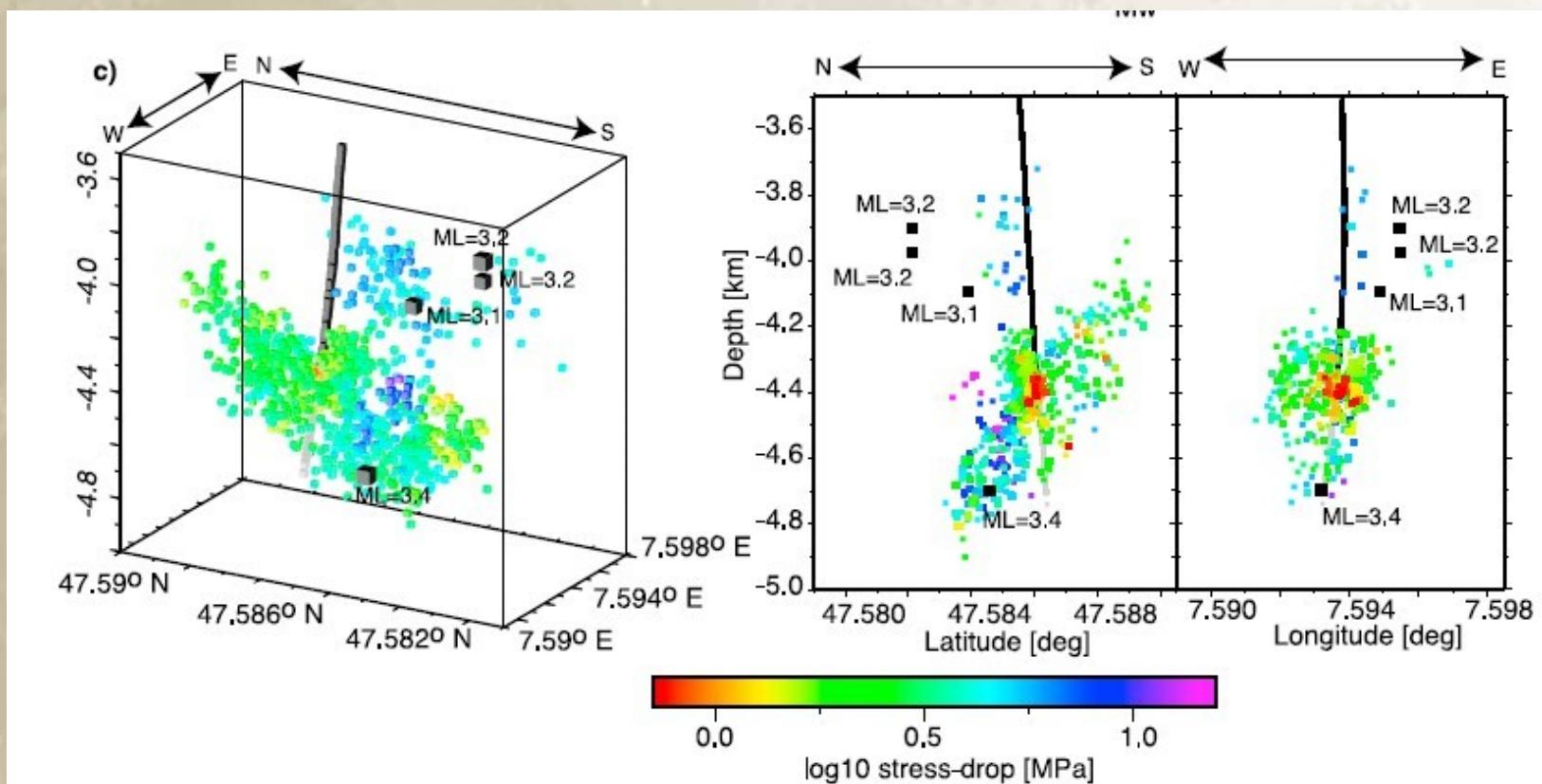
Aree vulcaniche



Aree tettoniche
Grandi esperimenti

SISMICITA' INDOTTA

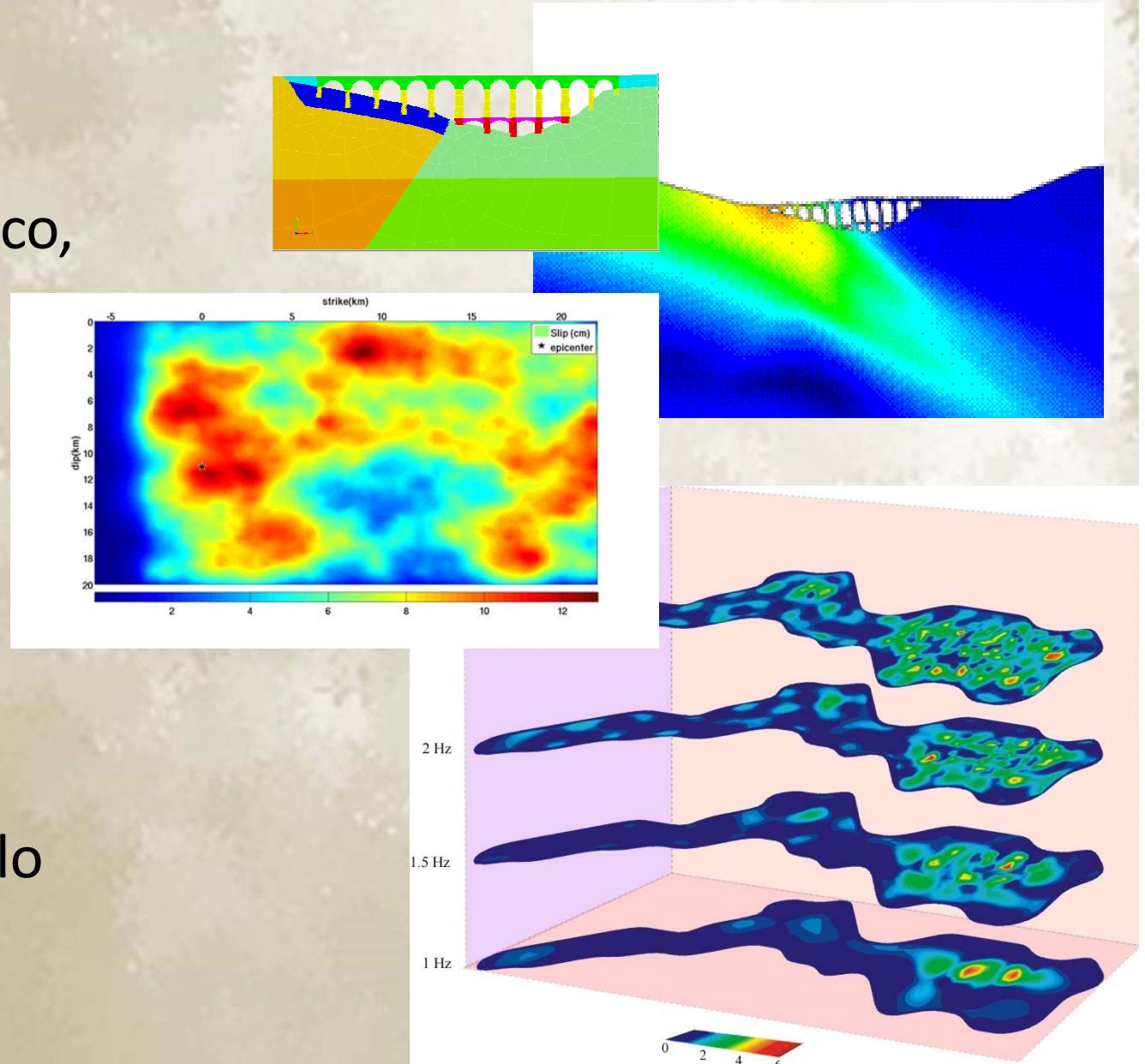
Lo studio della microsismicità nell'intorno di un pozzo permette la definizione di modelli che legano la pressione di poro, lo stress differenziale e alcuni osservabili sismici alle attività di estrazione delle risorse del sottosuolo



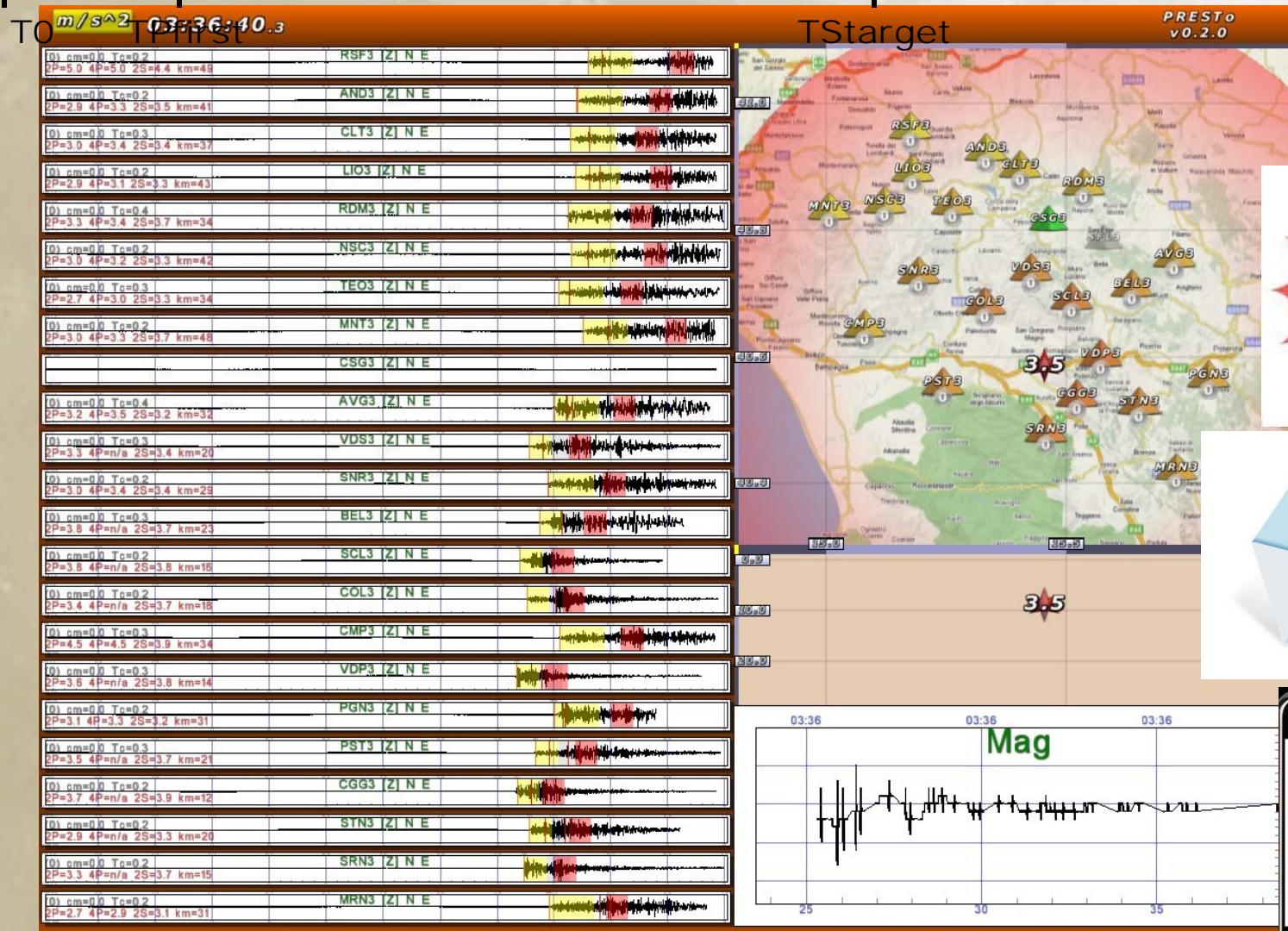
STRONG MOTION E PERICOLOSITA'

Analisi di registrazioni accelerometriche per la stima di parametri di picco, parametri integrali e spettrali del moto del suolo di interesse ingegneristico

-Sviluppo e implementazione di metodologie per il calcolo rapido di mappe di scuotimento post-sisma



EARLY WARNING

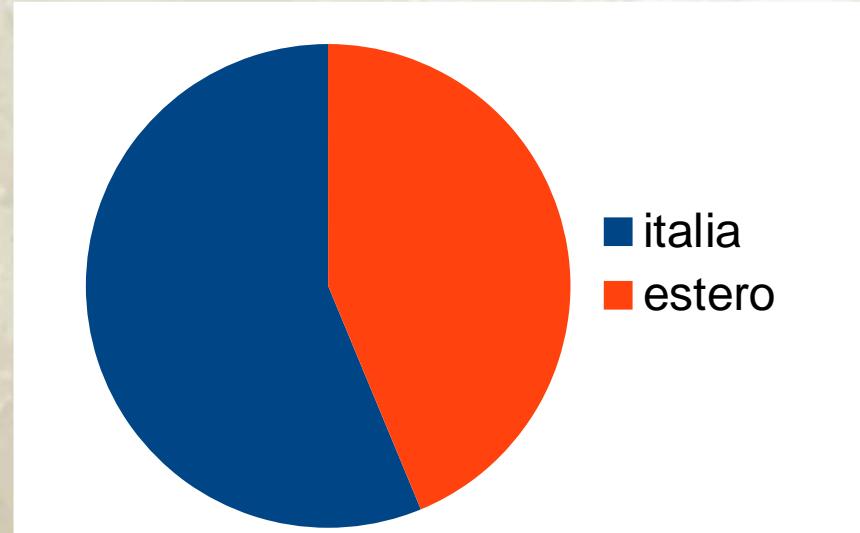
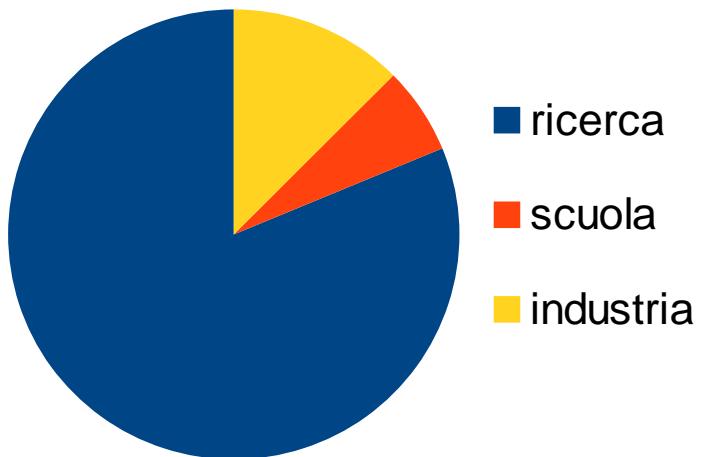


FOLLOW-UP

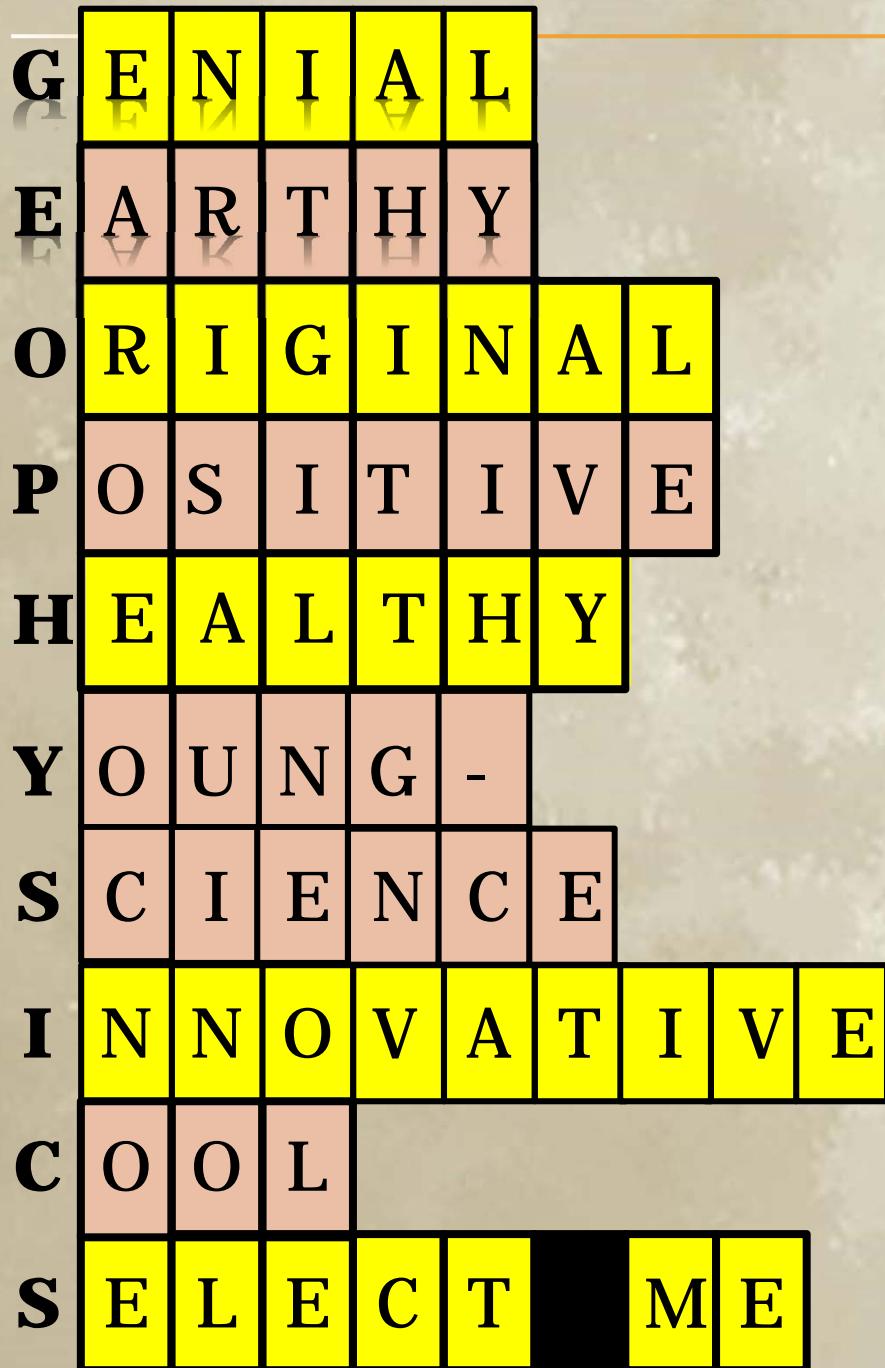
Consistenza attuale:

- 6 dottorandi (~ 2/anno)
- 3 post doc
- 1 contrattista
- 3 tecnologi

Dottorati ultimi 10 anni (17 persone)



GEOPHYSICS, WHY ?



Visit us!



Rissc Lab – Dipartimento di Fisica
Università di Napoli “Federico II”



@RISSCLab

Gli interessati possono visitare il
Laboratorio e parlare direttamente
con le persone che lo animano
ogni giorno il

26/5/2016 alle 11, area OF11.
Let us know