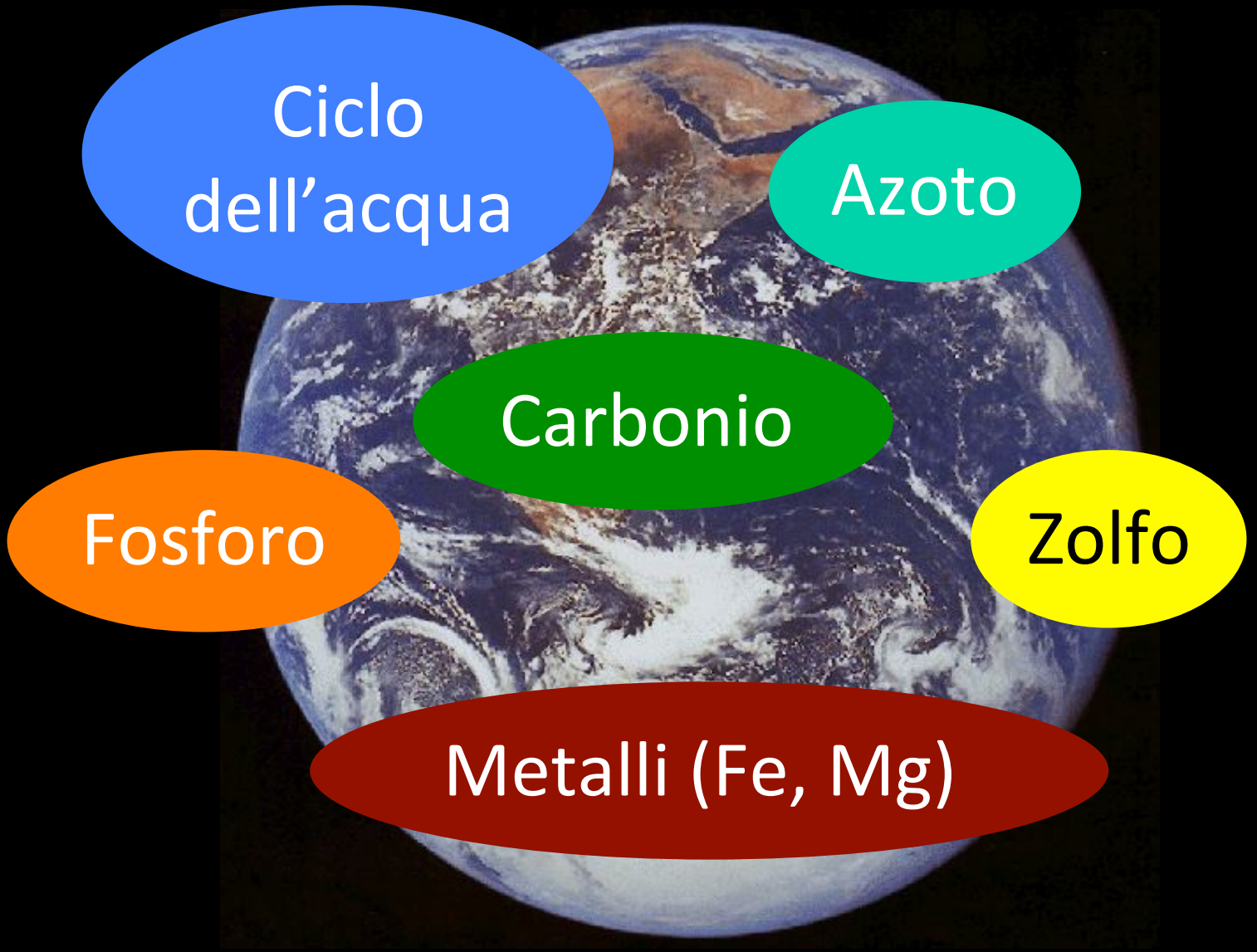
Geoscienze e cambiamenti globali: rischi, risorse, sostenibilità

Antonello Provenzale
Istituto di Geoscienze e Georisorse del CNR

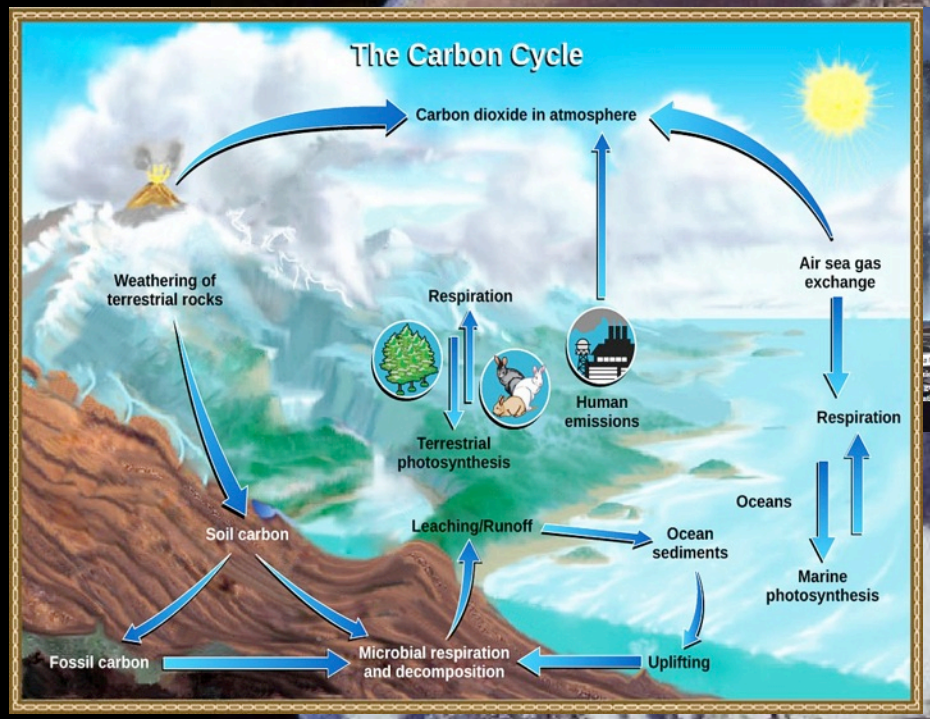
Attività dell'Istituto di Geoscienze e Georisorse

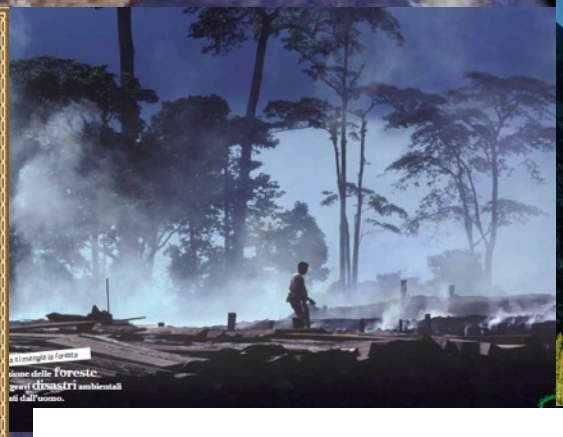


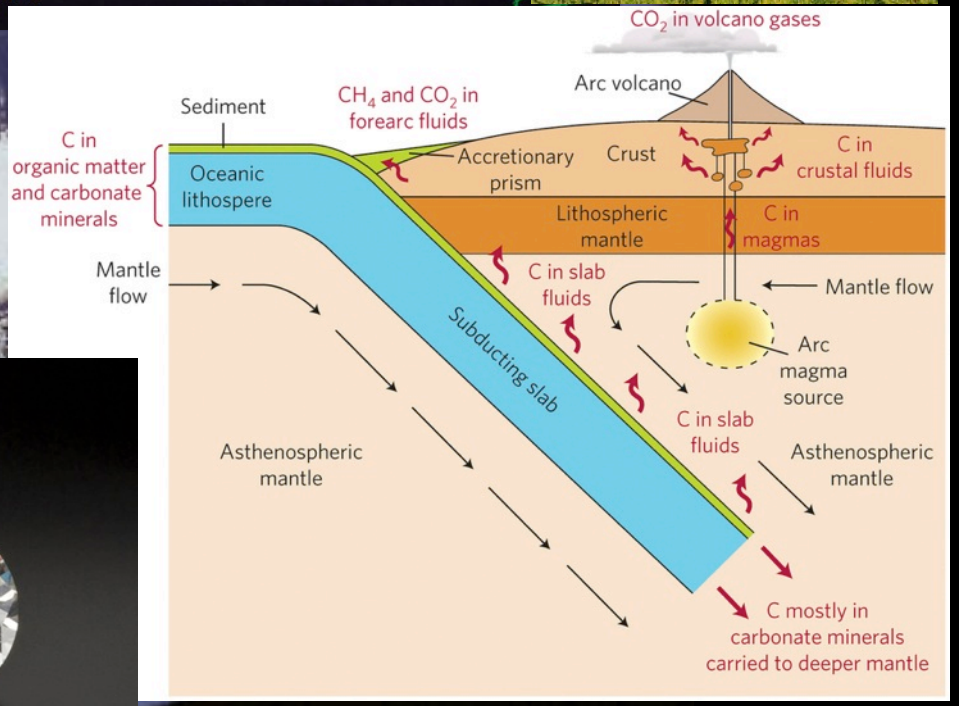
Il Sistema Terra è caratterizzato da un insieme di cicli biogeochimici interconnessi

Il ciclo globale del carbonio

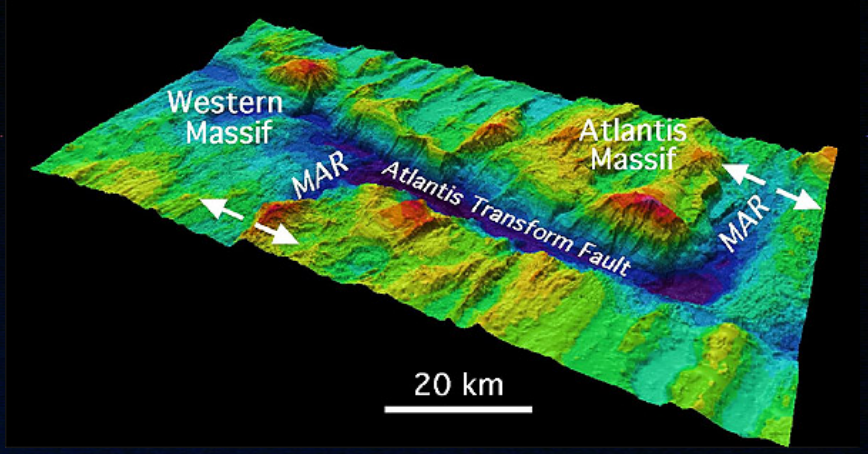
fra geosfera, biosfera e riscaldamento globale





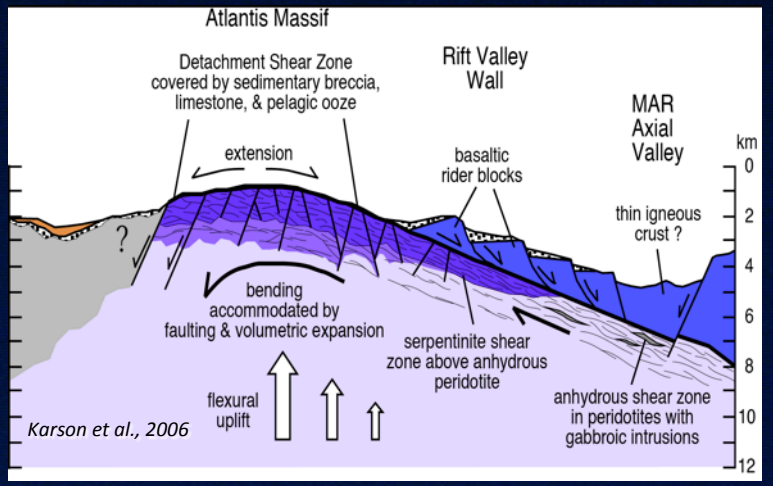


Serpentinizzazione in ambiente oceanico: motore biogeochimico dei processi oceanici?

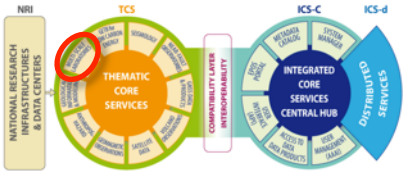


La presenza di serpentiniti sui fondali oceanici: quali conseguenze per la biosfera, per l'attività idrotermale, per il sequestro mineralogico di carbonio, per i cicli biogeochimici, per i processi tettonici di espansione dei fondali oceanici?

IGG proponente e partecipante alla spedizione IODP 357: ATLANTIS MASSIF SEAFLOOR PROCESSES: SERPENTINIZATION AND LIFE



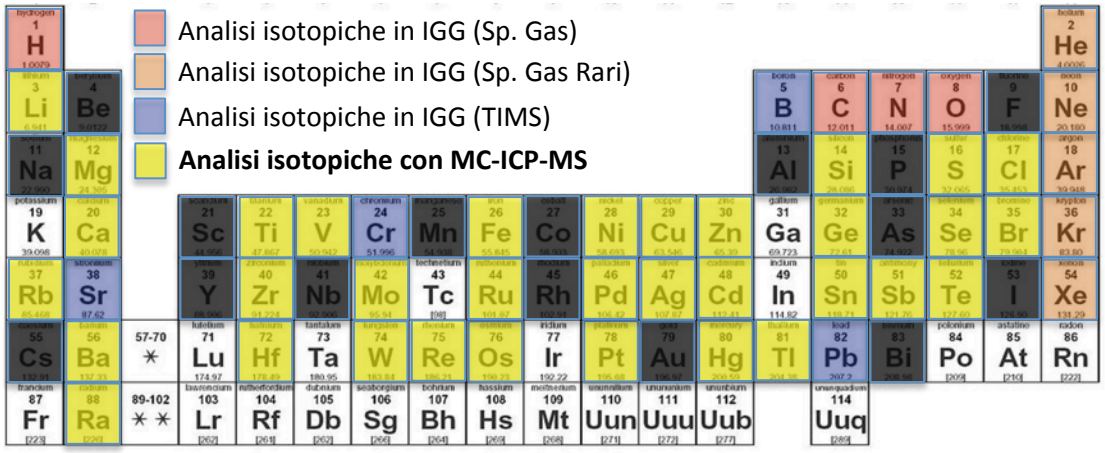
Integrating European Research Infrastructures for solid Earth Science

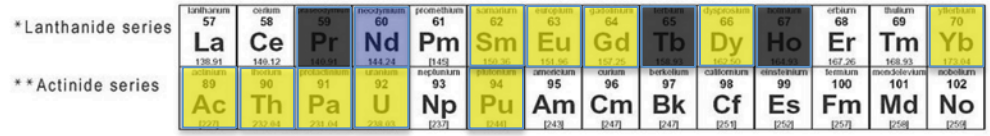


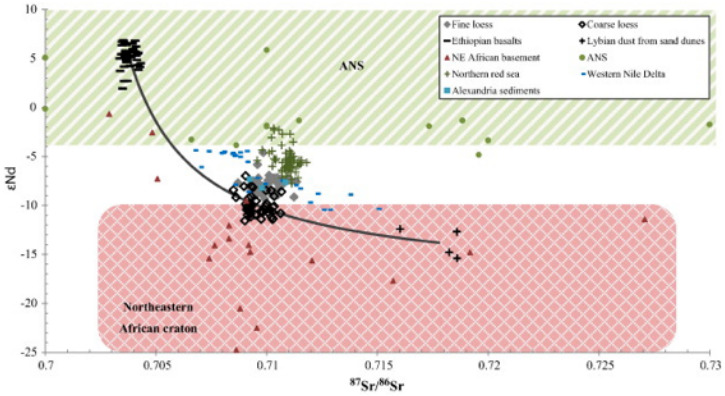
Laboratori IGG nella ESFRI EPOS

LAB chimica gas; LAB geocronologia e geochimica isotopica; LAB microanalisi geochimica e cristallo-chimica; LAB modellizzazione tettonica

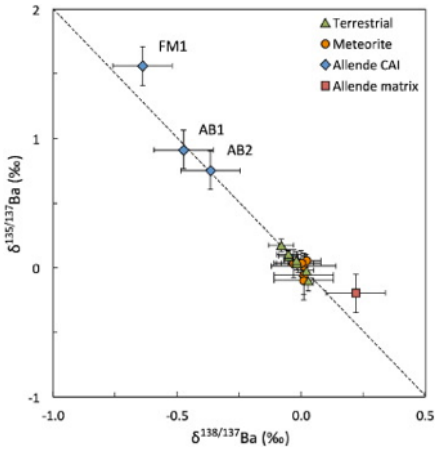
Tracciabilità isotopica: ICP-MS multicollettore





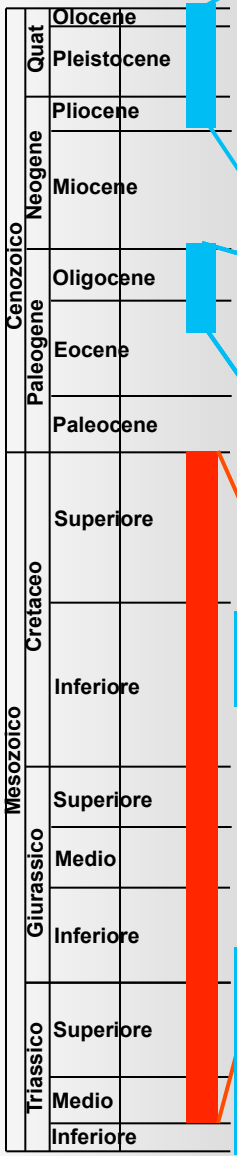


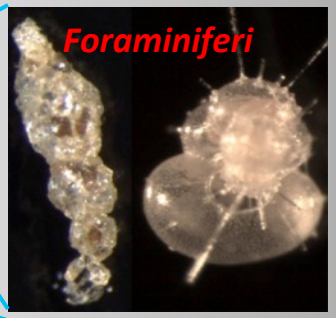
Isotopi di Sr-Nd sul Negev Loess
(Ben Israel et al., 2015, Quaternary Research)

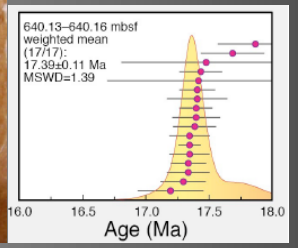


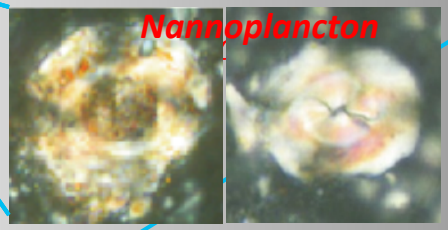
Isotopi di Ba in meteoriti
(Moynier et al., 2015, Chemical Geology)

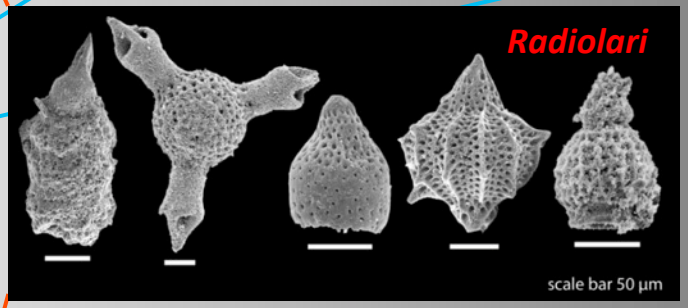
Geocronologia ed evoluzione paleoambientale

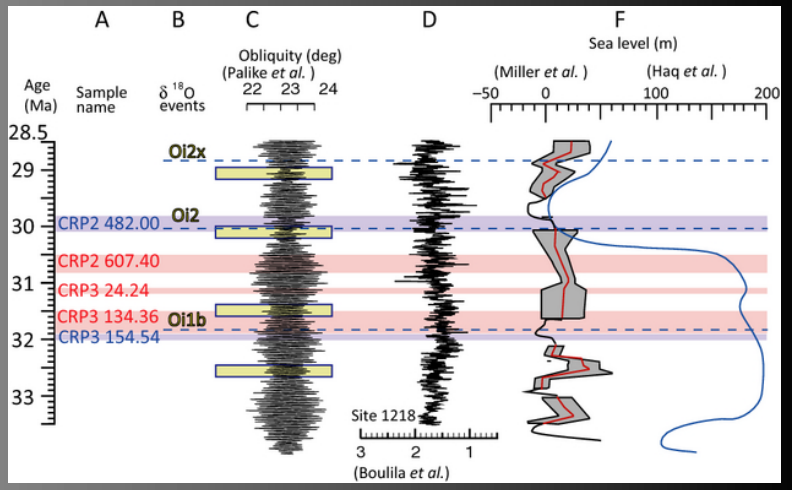












Olivetti et al., 2015

Progetto di Interesse NEXTDATA

Passato: Italy-2k
Ricostruzioni climatiche per gli ultimi 2000 anni

Responsabile del Progetto:
Antonello Provenzale, IGG-CNR

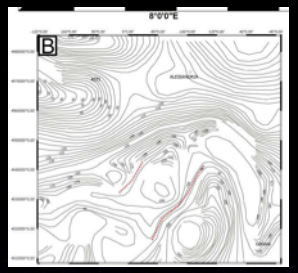
Coordinamento amministrativo :
Enrico Brugnoli, Direttore DTA-CNR

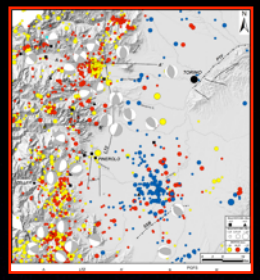
NextData
un sistema nazionale per la raccolta, conservazione, accessibilità e diffusione dei dati ambientali e climatici in aree montane e marine

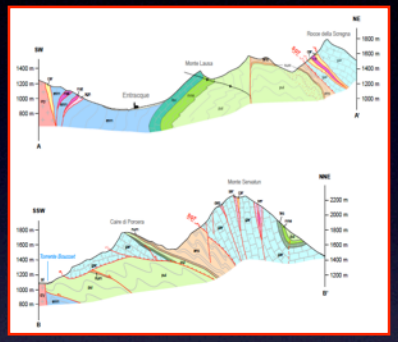
Presente:
monitoraggio in regioni d'alta quota

Futuro:
Proiezioni climatiche in regioni montane

RISCHI

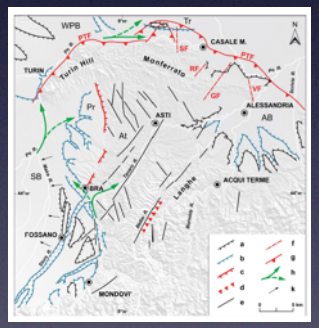


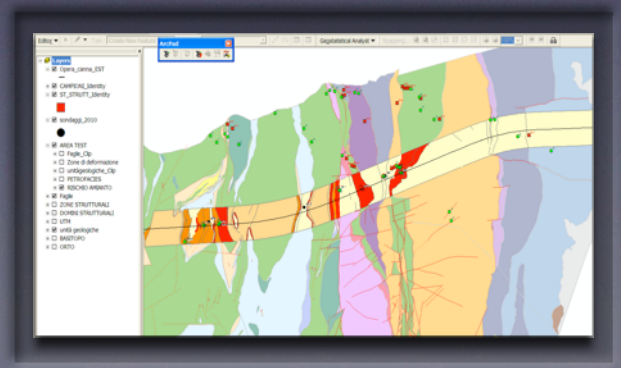




Modello geologico ambientale, cartografia geologica, misura in campo, modello numerico

Pericolosità geologico - ambientale





Rischio geologico - ambientale

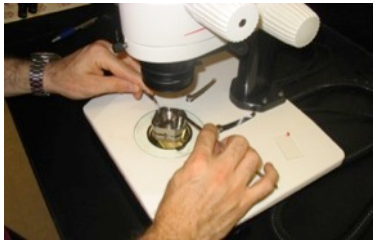
Cooperazione internazionale MAECI su geotermia e pericolosità geologica

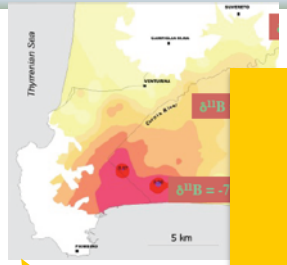
Dal 2010, Especializado en Geotermia a El Salvador

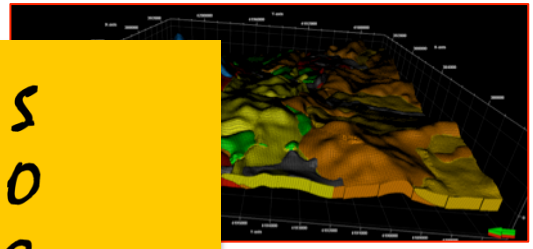
Dal 2014, monitoraggio vulcanico in Corea del Nord (DPRK) e stime per la geotermia a bassa entalpia

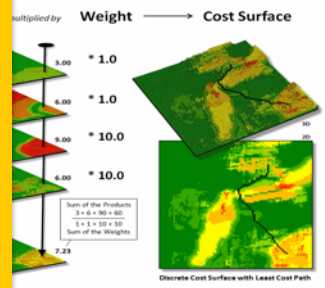
Dal 2015, SAPEVO: Mitigar Peligros Volcanicos (monitoraggio e formazione in Salvador)

RISORSE: ENERGIA GEOTERMICA









ESPLORAZIONE

VALUTAZIONE DELLA RISORSA

GESTIONE DELLA RISORSA

ACQUISIZIONE DATI

INTERPRETAZIONE DATI

INFORMAZIONE, BANCHE DATI, DISSEMINAZIONE

MONITORAGGIO DEI SISTEMI GEOTERMICI

FORMAZIONE E TRAINING

SOCIETÀ AMBIENTE ENERGIA

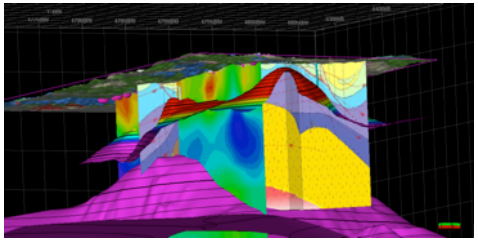
IMAGE - Integrated Methods for Advanced Geothermal Exploration
FP7 2013 - 2017

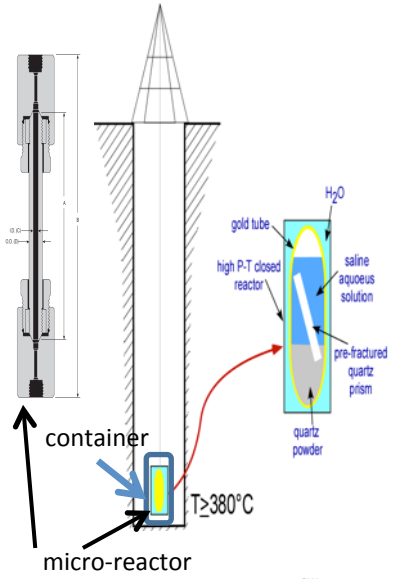
Sviluppo di Metodi Affidabili di Esplorazione dei Sistemi Geotermici

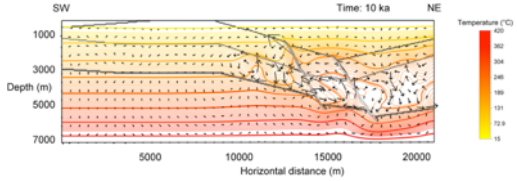
STUDIO DI PROCESSI E PARAMETRI

SVILUPPO E TECNICHE DI ESPLORAZIONE AVANZATA

SVILUPPO E TEST IN-SITU DI METODI INTEGRATI DI ESPLORAZIONE



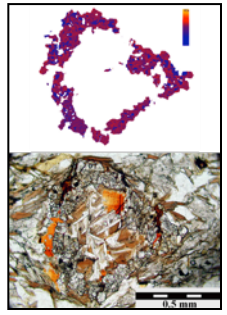




ANALISI DI FLUIDI GEOTERMICI e SUPERCRITICI

STUDIO PARAMETRI PETROFISICI DI SERBATOIO

MODELLISTICA INTEGRATA



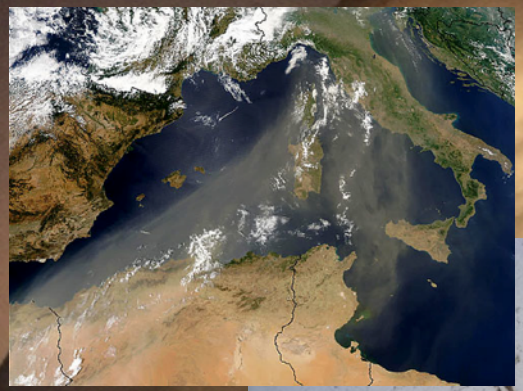
Drilling in dEep, Super-Critical AMBient of continentaL Europe
H2020 2015 - 2018

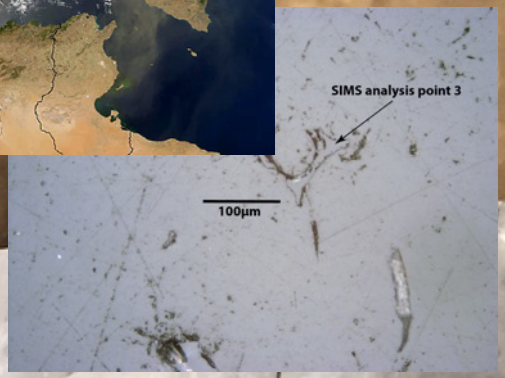
Migliorare le conoscenze geologiche, geofisiche e geochimiche in zone crostali di alta temperatura e pressione per predire e controllare l'avanzamento della perforazione

RISORSE: Geomateriali per la società e la salute

Analisi di biomateriali sintetici e naturali

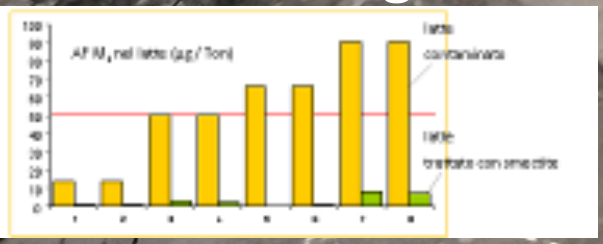
Caratterizzazione mineralogica e provenienza dei materiali



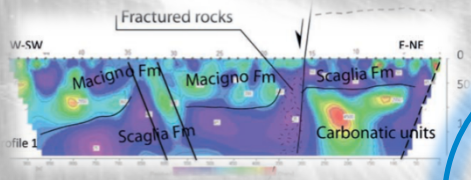


Geomateriali: caratterizzazione mineralogica, chimica e isotopica e tracciabilità di polveri atmosferiche

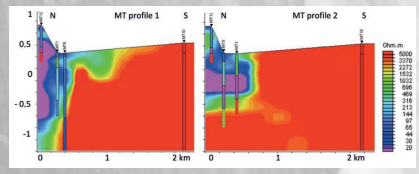
Qualità e tracciabilità di prodotti alimentari e agricoli

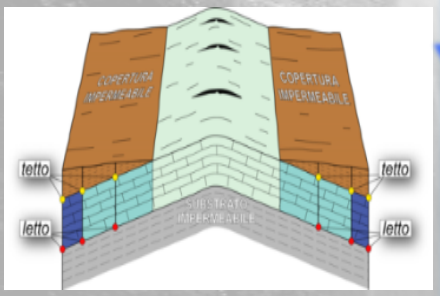


SOSTENIBILITA' DEI SISTEMI ACQUIFERI E CAMBIAMENTI GLOBALI
GLI STUDI DI IDROGEOLOGIA E GEOCHIMICA ISOTOPICA



GEOFISICA

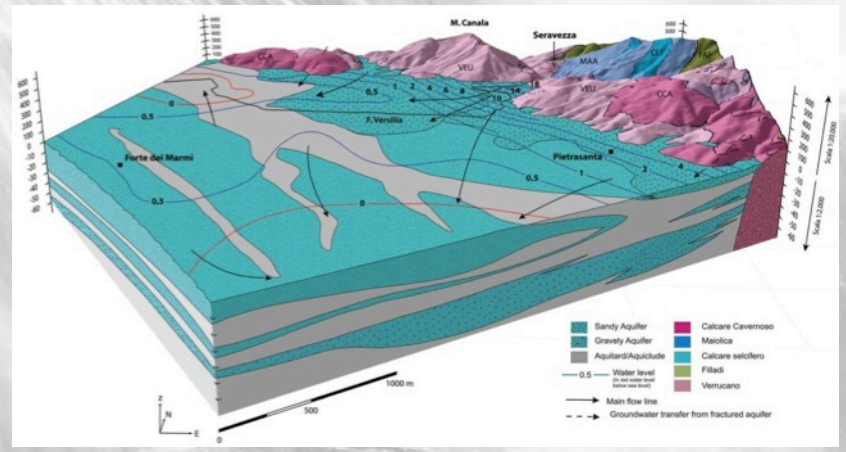


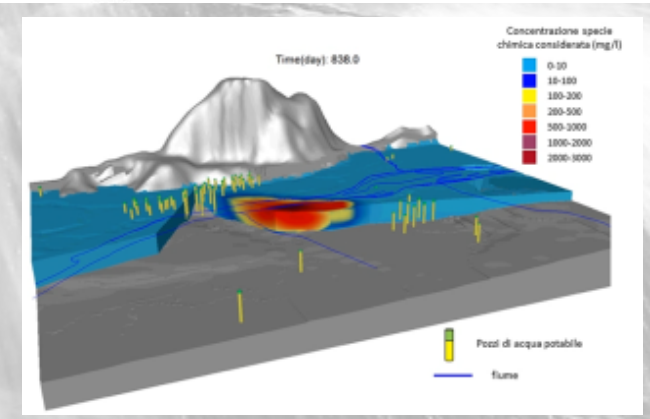


GEOLOGIA IDROSTRATIGRAFIA

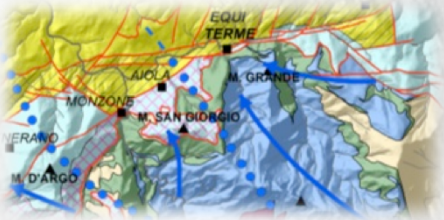
MODELLISTICA

concettuale

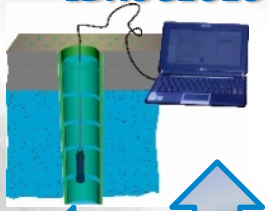




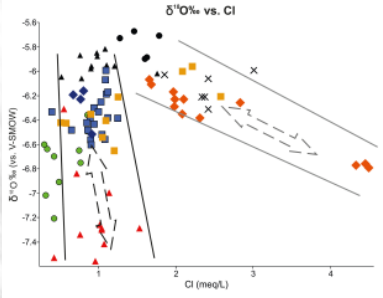
numerica



IDROGEOLOGIA



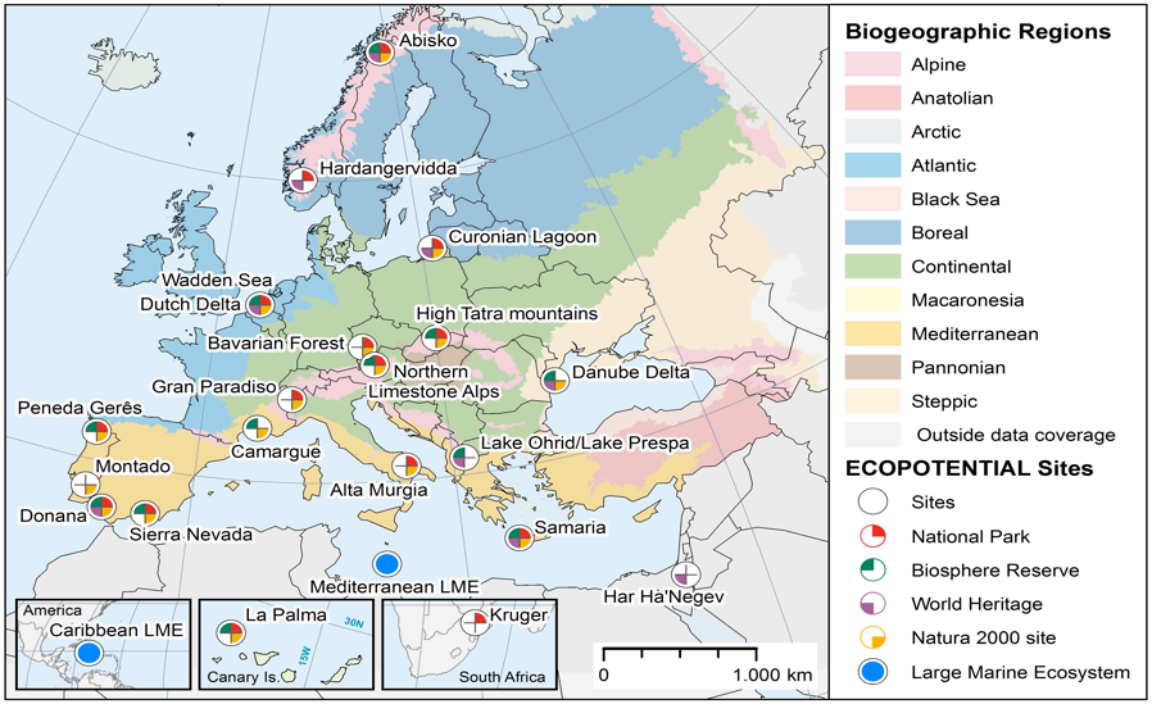
GEOCHIMICA E GEOCHIMICA ISOTOPICA

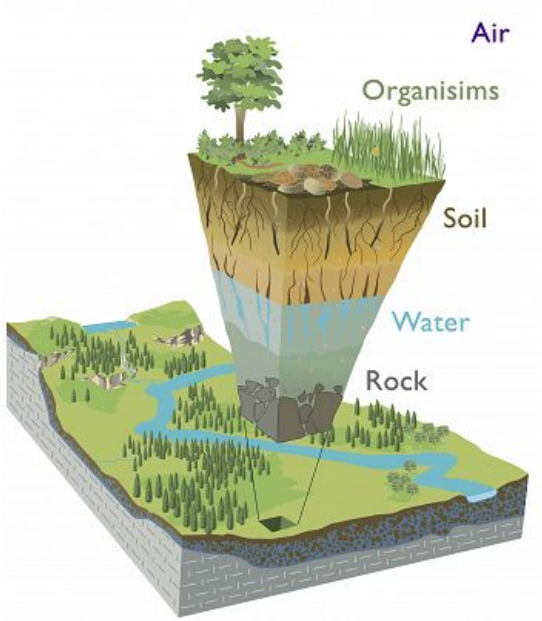


H2020 Project ECOPOTENTIAL: Improving future ecosystem benefits through Earth Observations

Starting date: 1st June 2015, Duration: 4 years, 47 partners

Coordinatore: Antonello Provenzale, IGG-CNR





Earth Critical Zone

GROUP ON EARTH OBSERVATIONS


Grazie per l’attenzione