



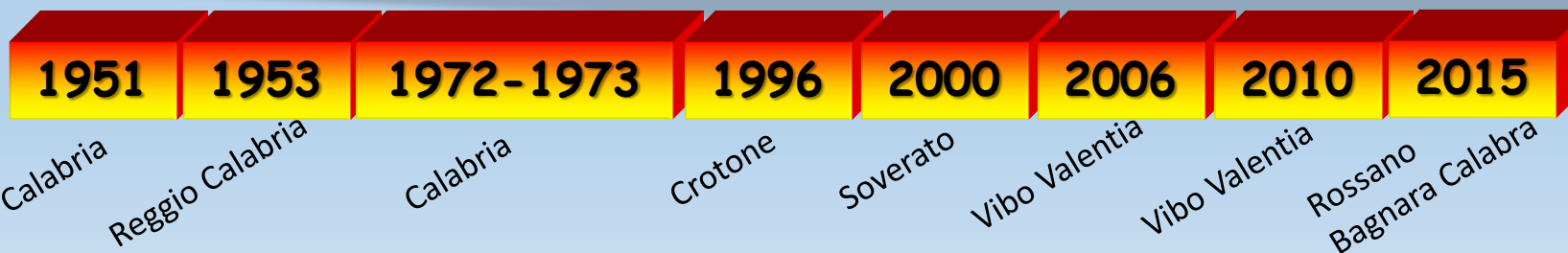
Fabrizio Lirer

Istituto per l'Ambiente Marino
Costiero (IAMC) – CNR

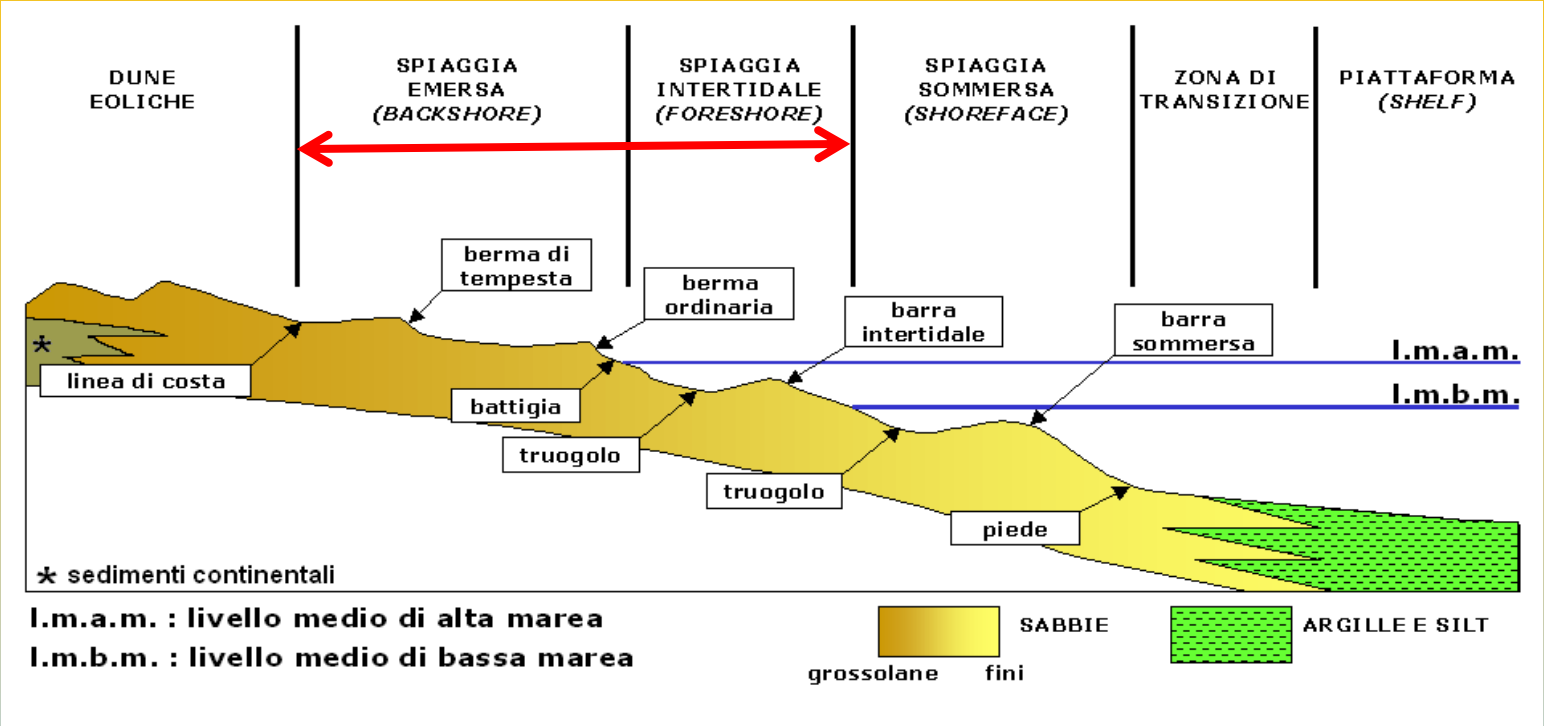


Il sistema Terra-Mare di alcuni settori della Calabria (Bagnara Calabria e Monasterace)

La Calabria è stata storicamente interessata da numerosi eventi calamitosi



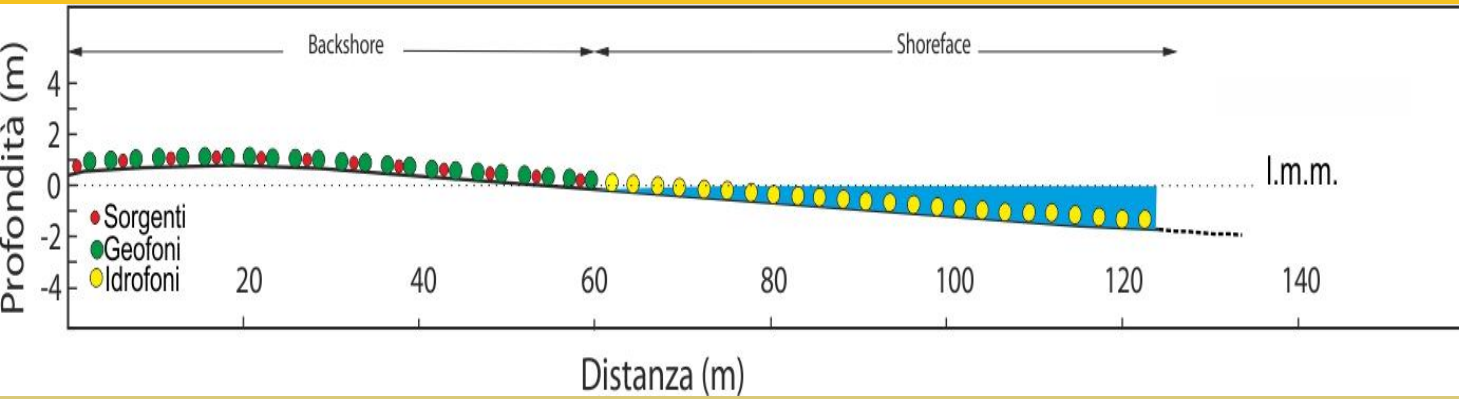
Nell'ambito della pianificazione della gestione della fascia costiera, uno dei problemi principali è rappresentato dalla carenza di informazioni circa le zone di Spiaggia emersa e Spiaggia intertidale.



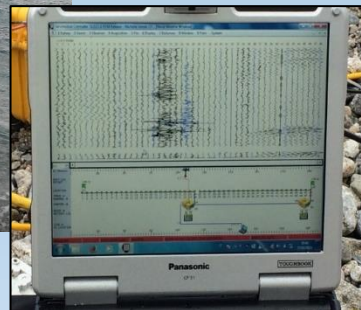
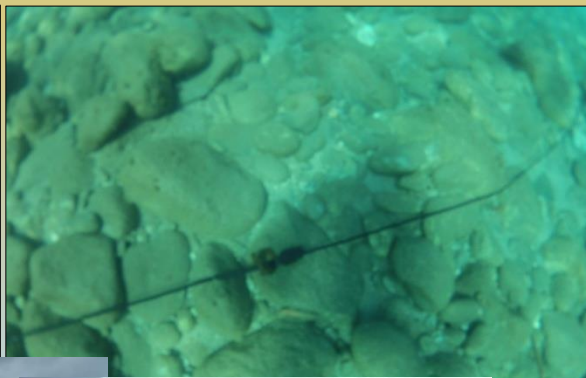
L'applicazione di nuove tecnologie può aiutare a superare questi ostacoli

Le basse profondità impediscono indagini mediante le convenzionali navi di ricerca e la presenza di sedimenti non consolidati può provocare l'attenuazione del segnale sismico. Inoltre, nelle aree di transizione, il basso valore del rapporto segnale/rumore, legato a vento, frangenza e correnti sul fondo, compromettono la qualità del dato.

Uso simultaneo di geofoni ed idrofoni in modo tale da realizzare

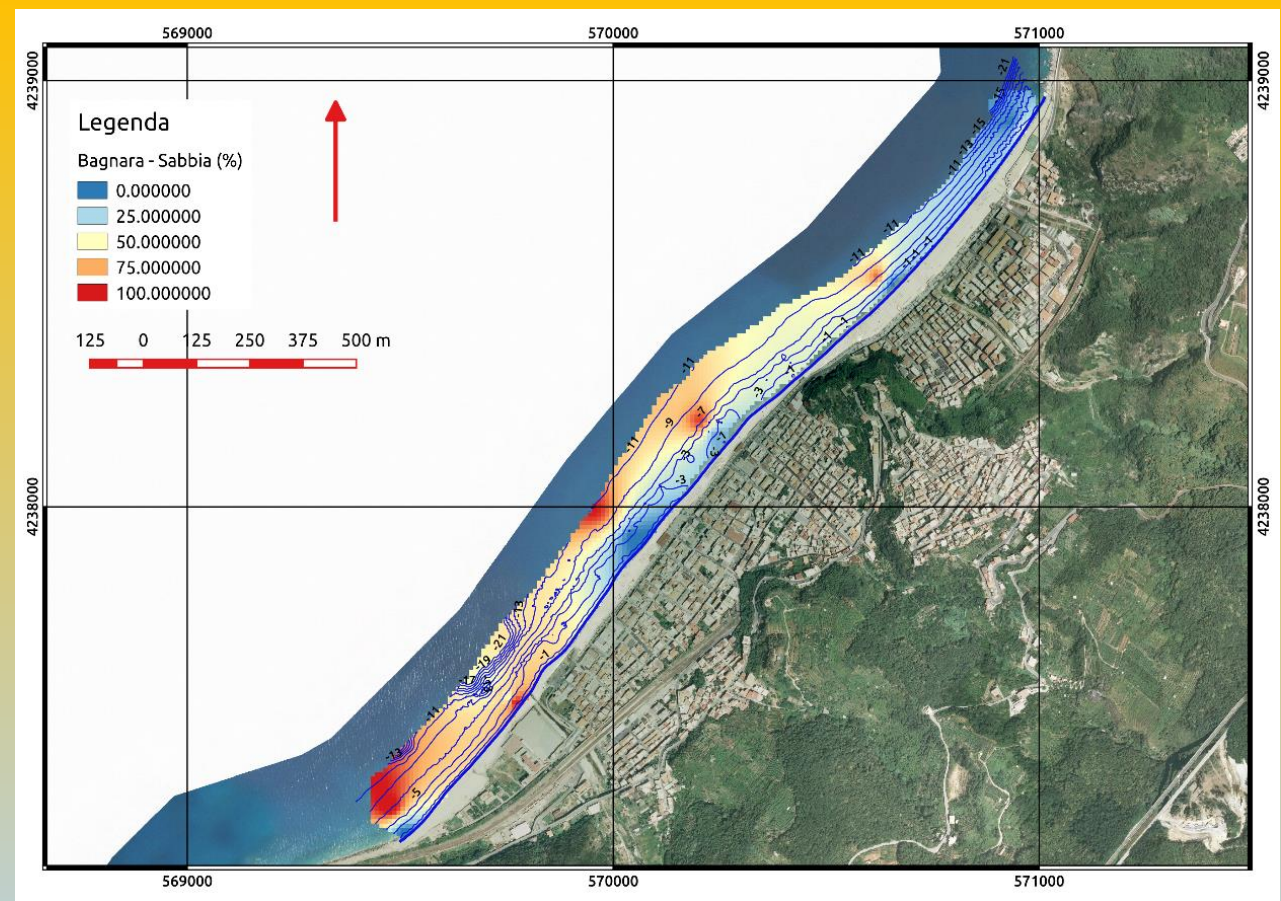
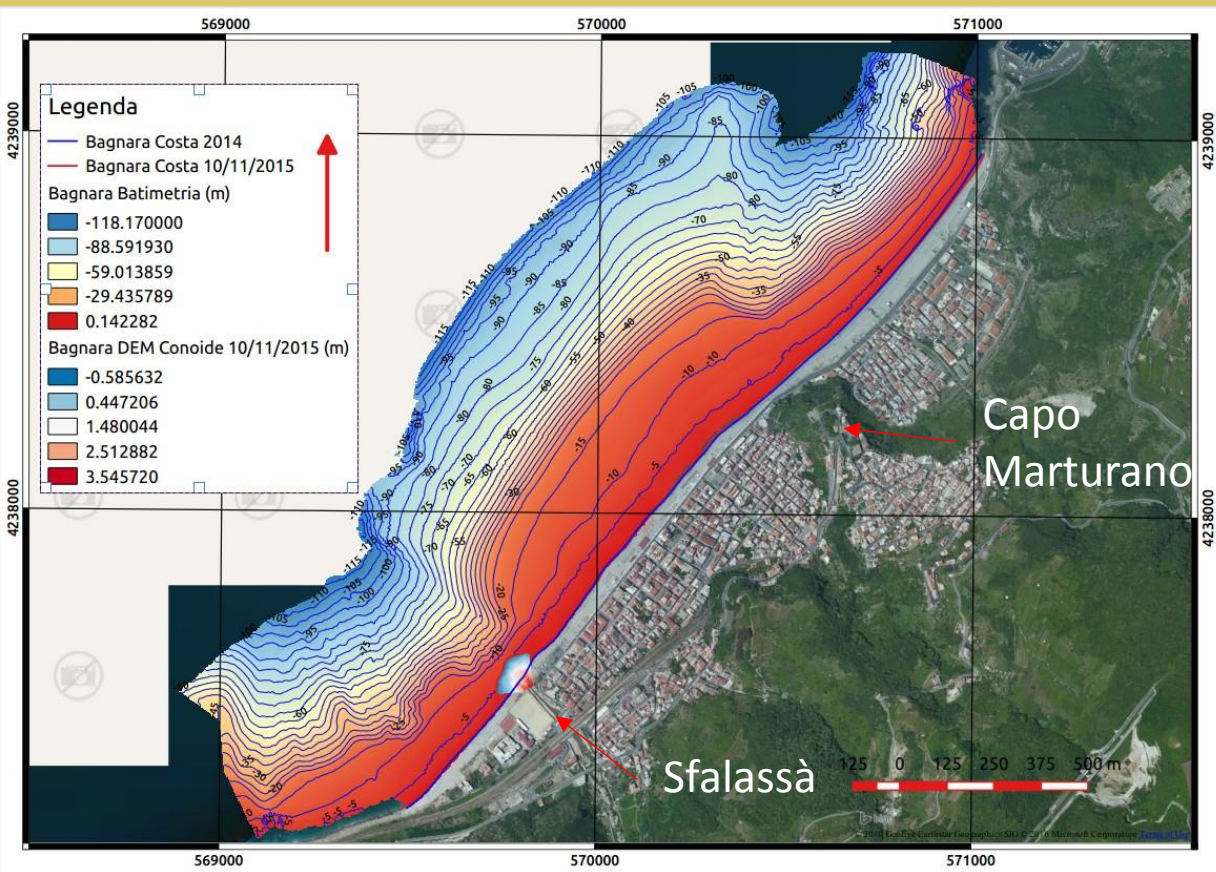


X-Band Wave Radar Mobile





Caratterizzazione del fondo mare di Bagnara Calabra



Distribuzione areale delle % di sabbie e ghiaie nel settore marino-costiero di Bagnara Calabra

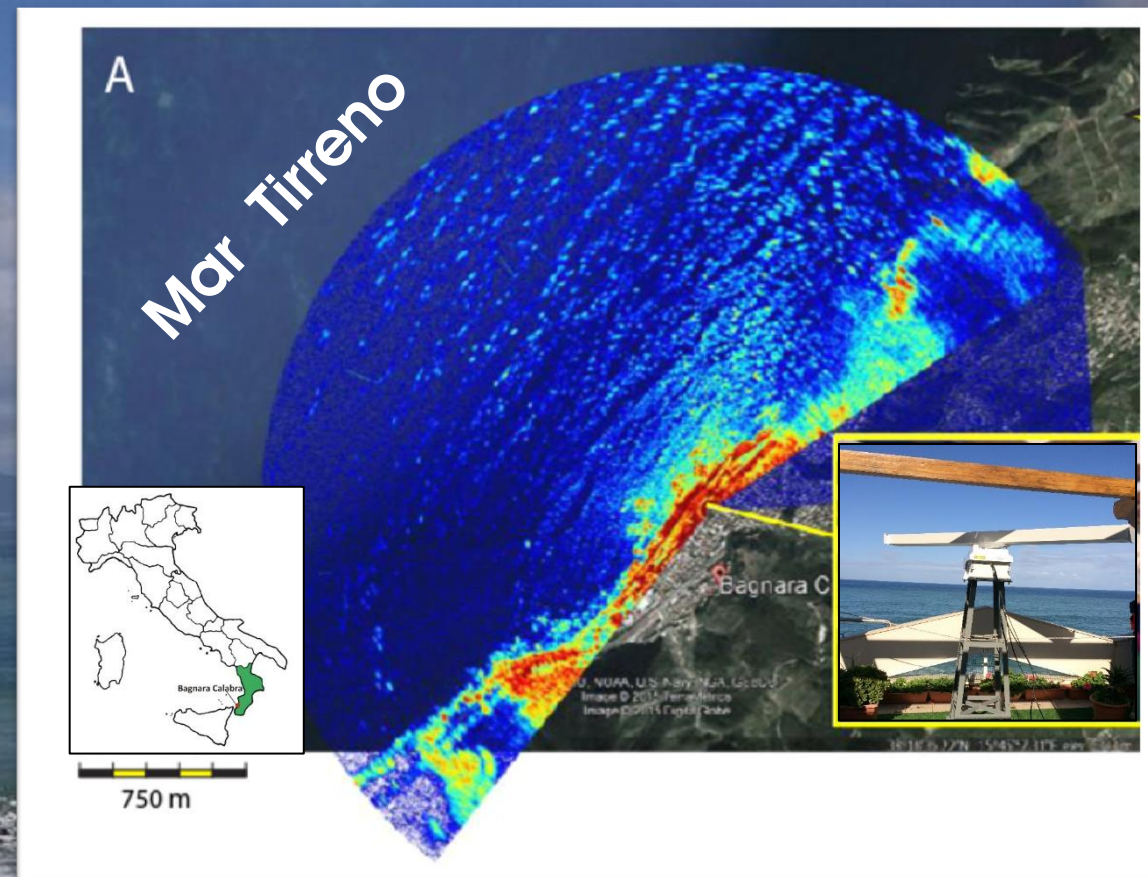
Morfobatimetria Bagnara Calabra

Sistema X-Band Wave Radar

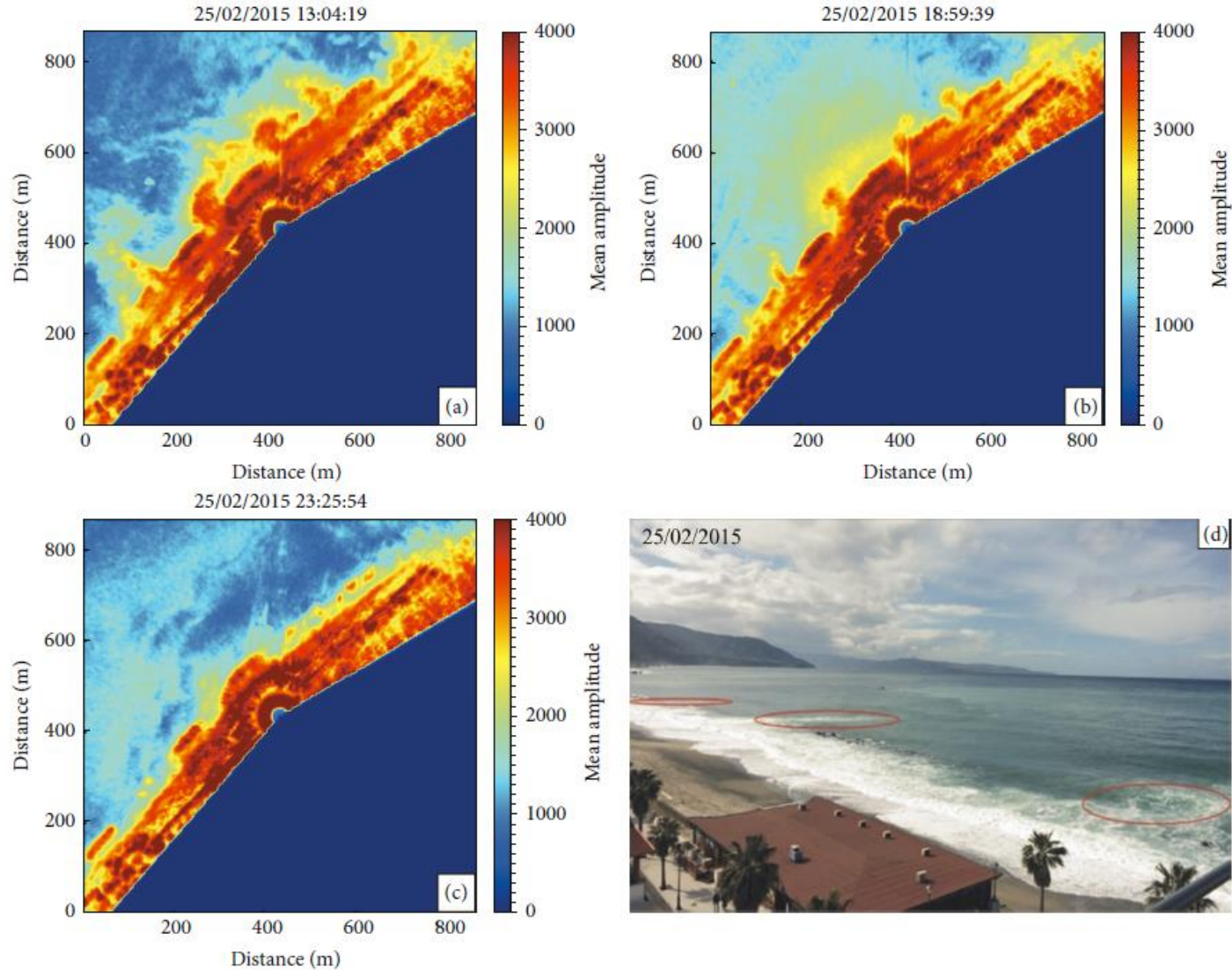
Mobile:

Bagnara Calabra

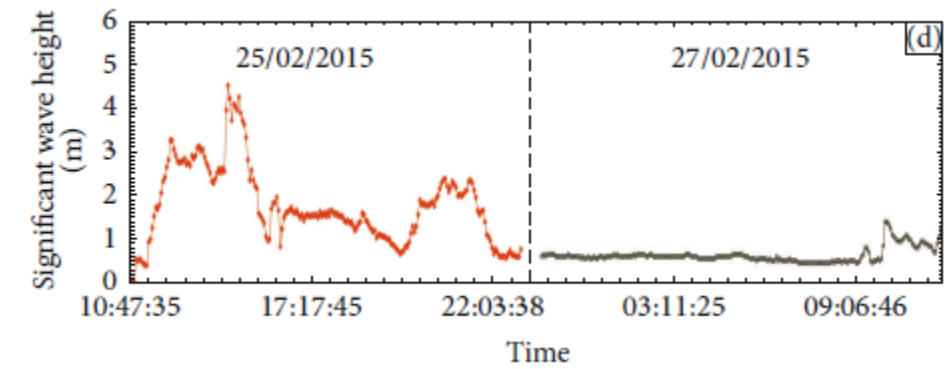
Il sistema X-Band Wave Radar Mobile, fornendo in tempo reale misure di parametri legati al moto ondoso e rilevando fenomeni dovuti all'idrodinamica costiera, si presenta come uno strumento molto utile nell'ambito di studi di zone costiere e monitoraggio delle opere di difesa.



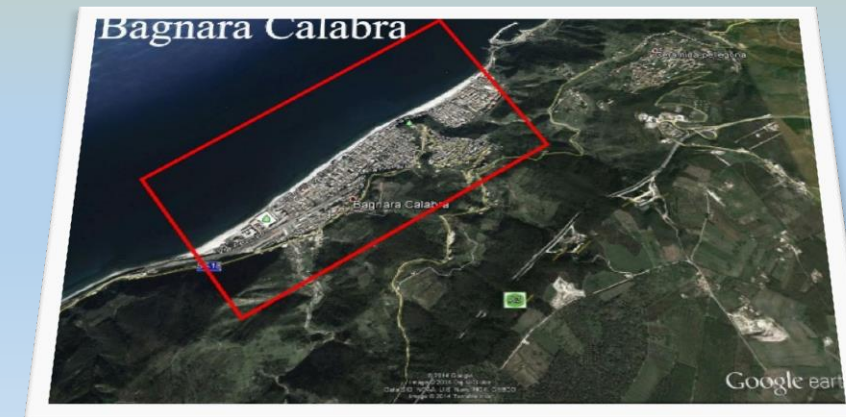
Bagnara Calabria

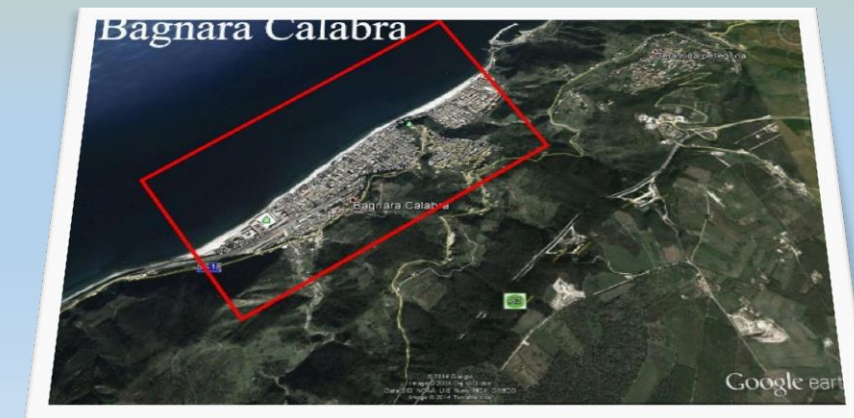
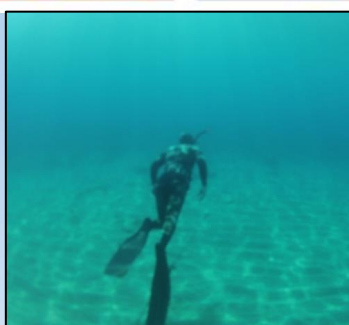
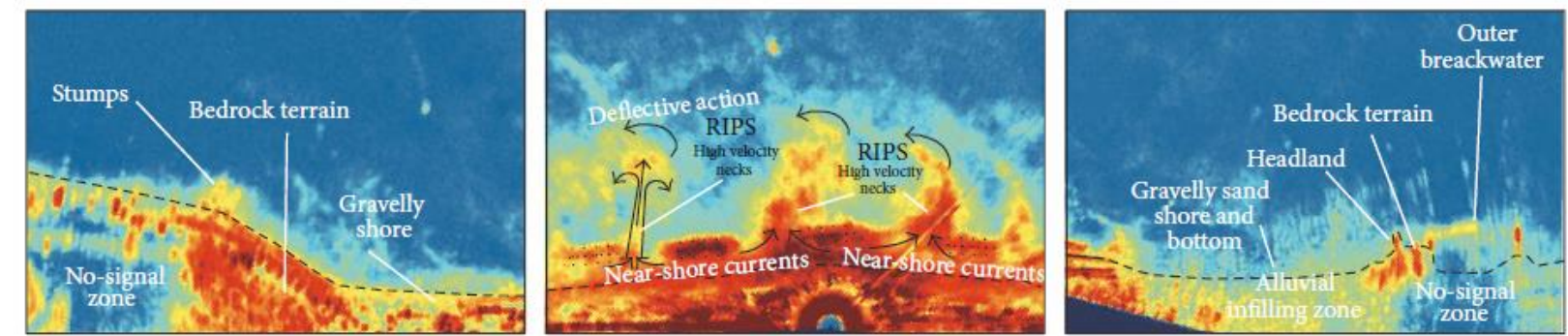
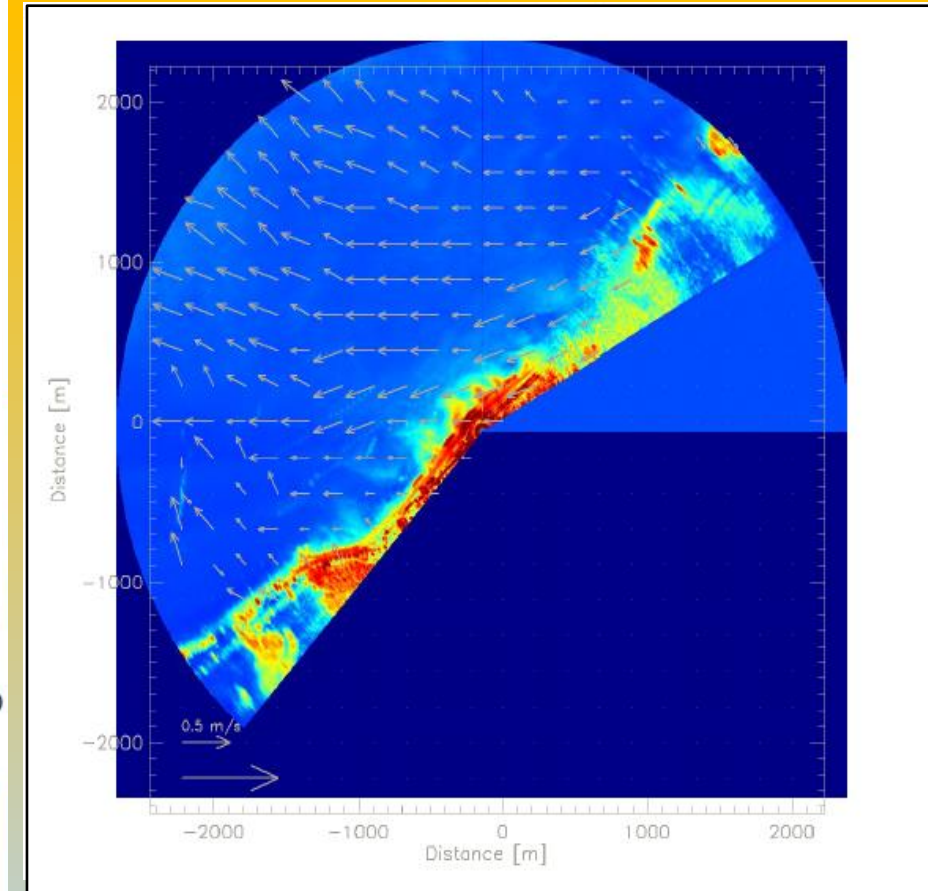
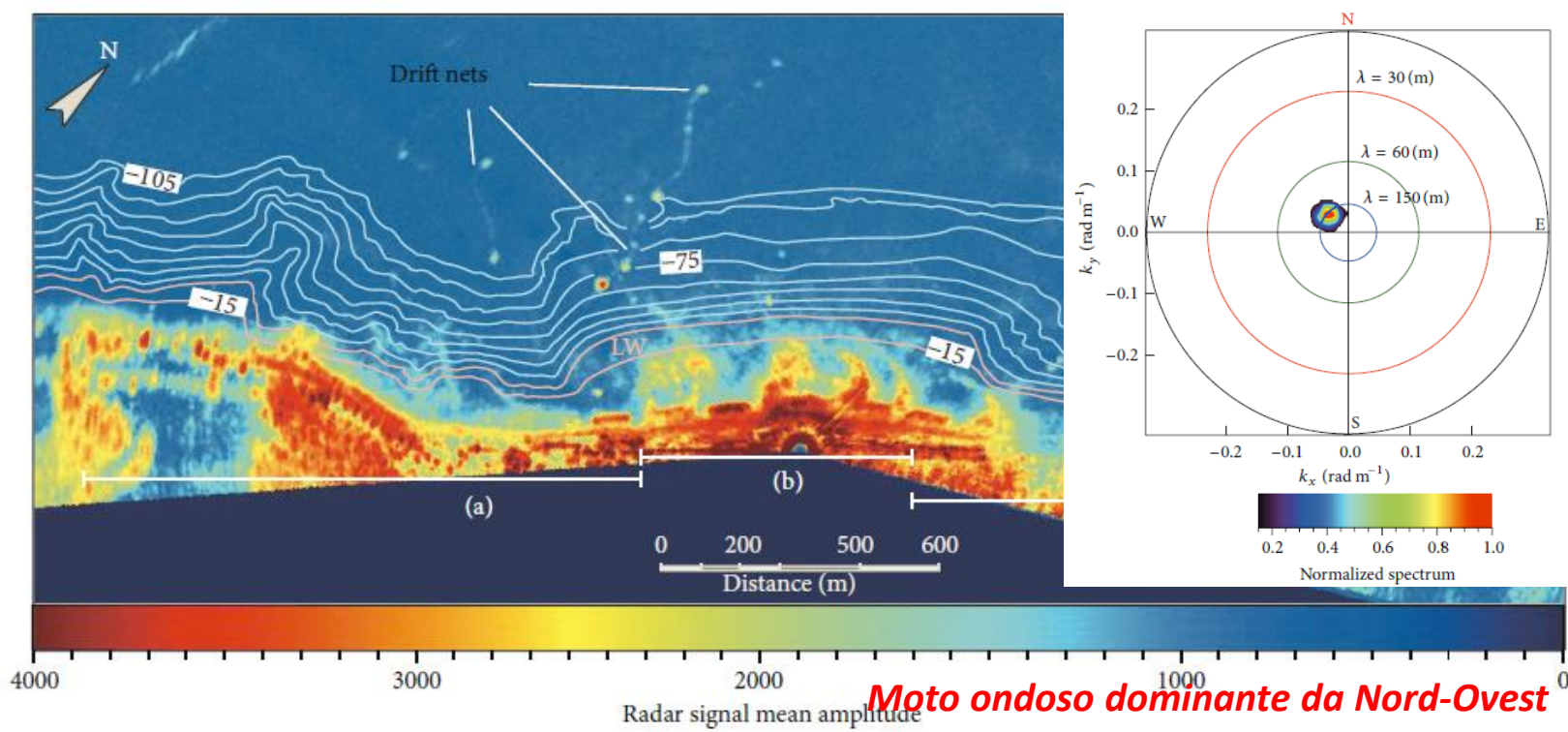


Temporal variation of intensities rip current occurrence: (a) very rough sea; (b) moderate sea; (c) smooth sea. (d) The rip currents can be seen in the photograph (red circle), identified by the region without breaking waves and foam transported outside of the surf zone.



Punzo M., et al., (2016). Application of X-Band Wave Radar for Coastal Dynamic Analysis: Case Test of Bagnara Calabria (South Tyrrhenian Sea, Italy). *Journal of Sensors*, v 2016, doi.org/10.1155/2016/6236925

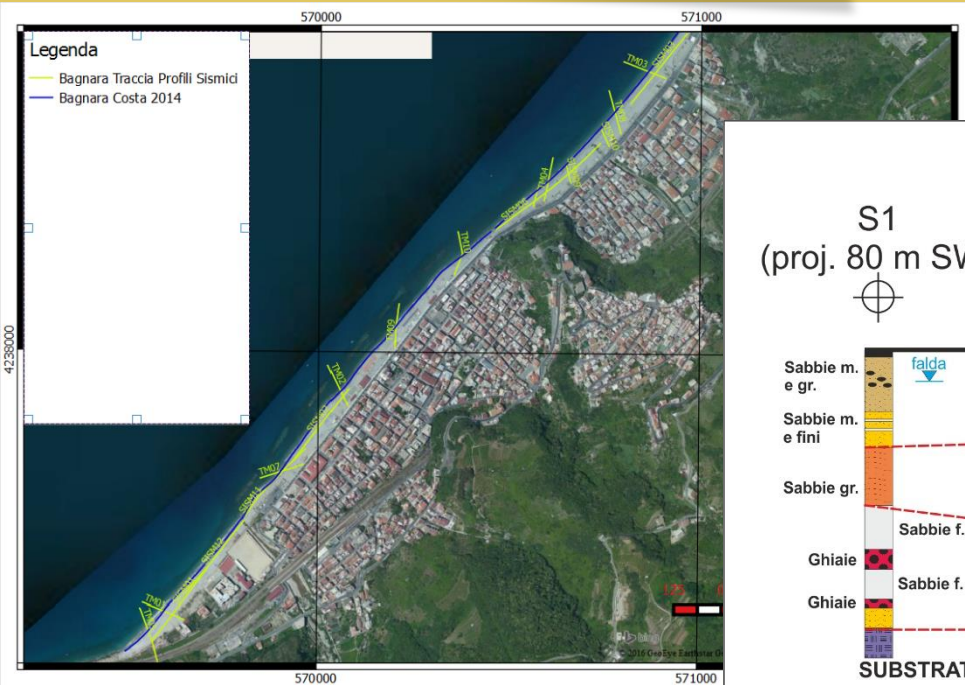




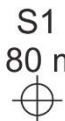
Bagnara Calabra

Tomografia sismica terra-mare Bagnara Calabra

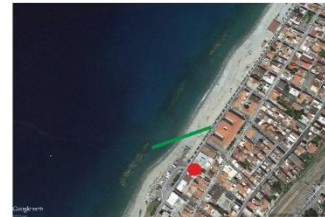
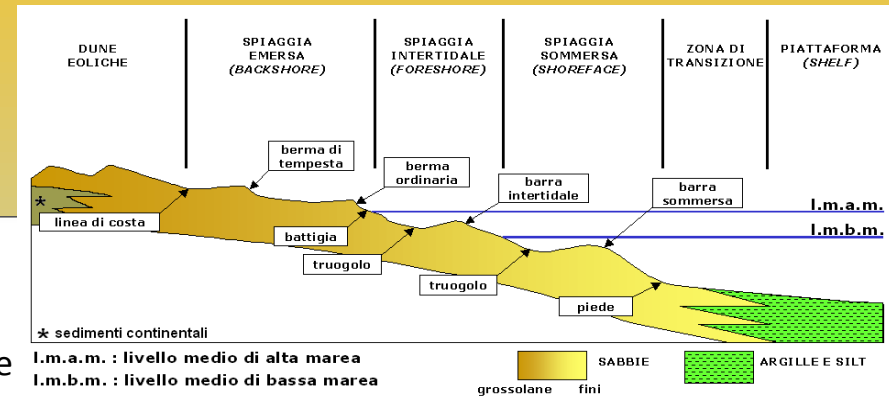
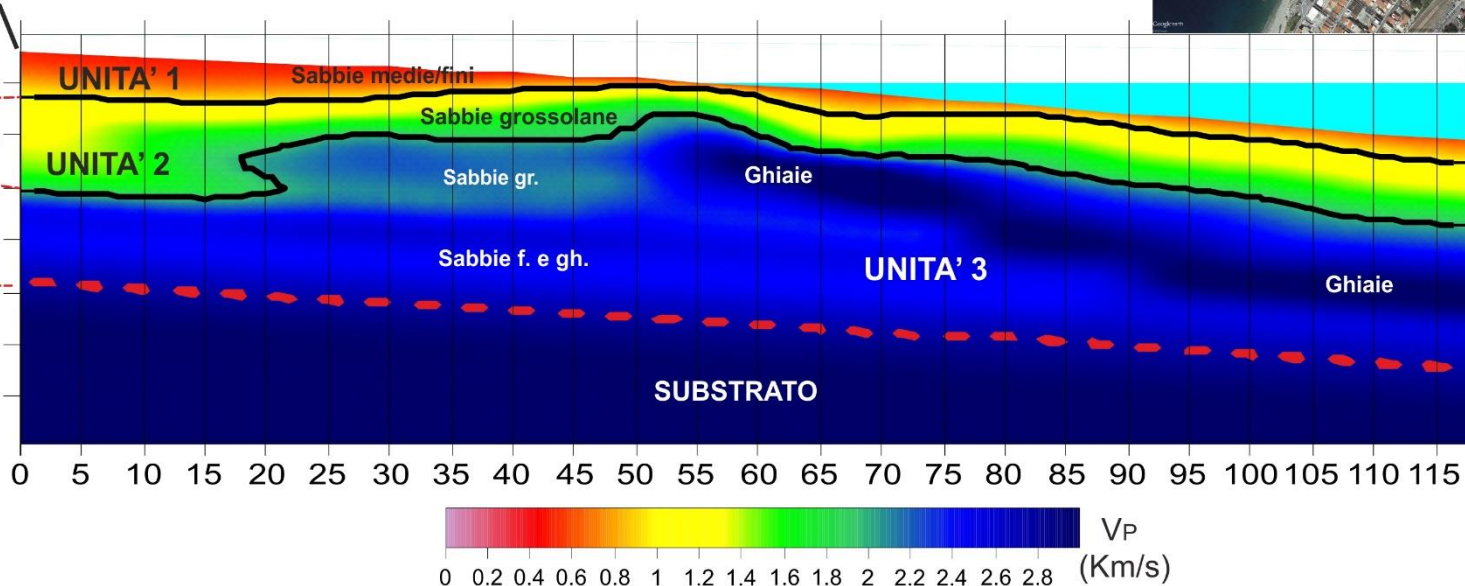
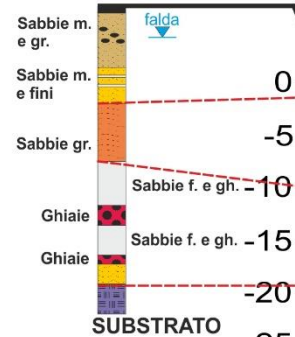
Geometrie inclinate verso mare nella transizione da spiaggia emersa a spiaggia intertidale, mentre altre geometrie sono inclinate verso terra nella zona di spiaggia emersa; le due zone sono separate da una risalita del sismostrato interpretabile come una berma.



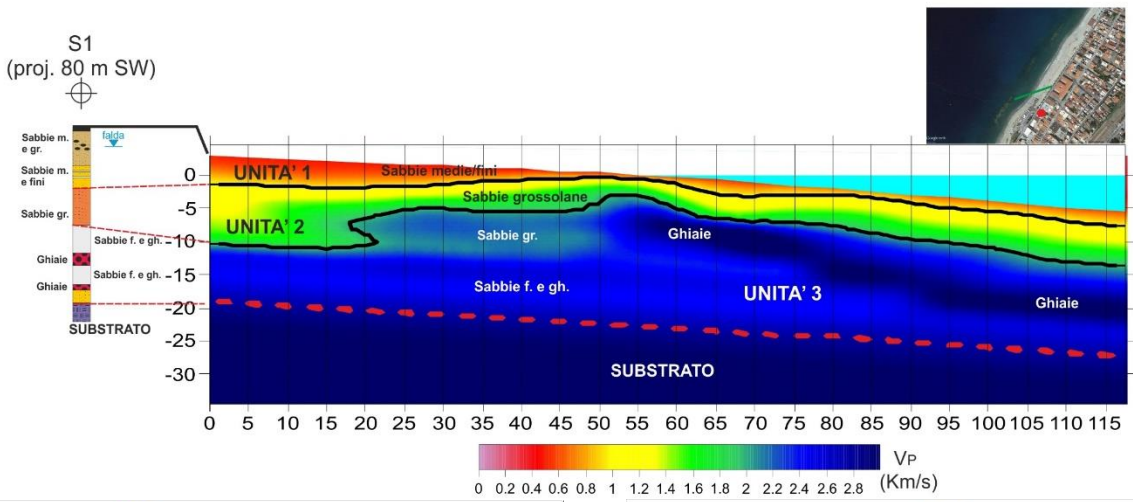
S1
(proj. 80 m SW)



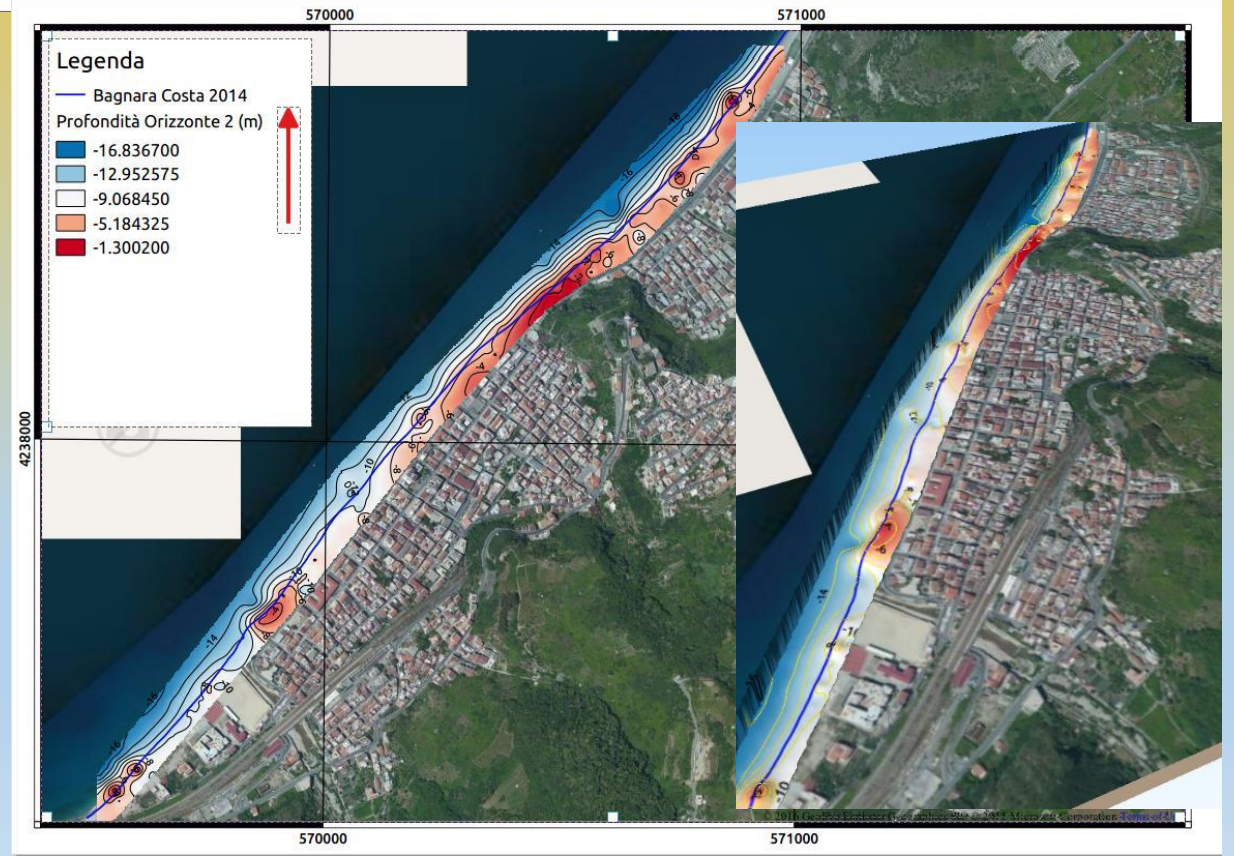
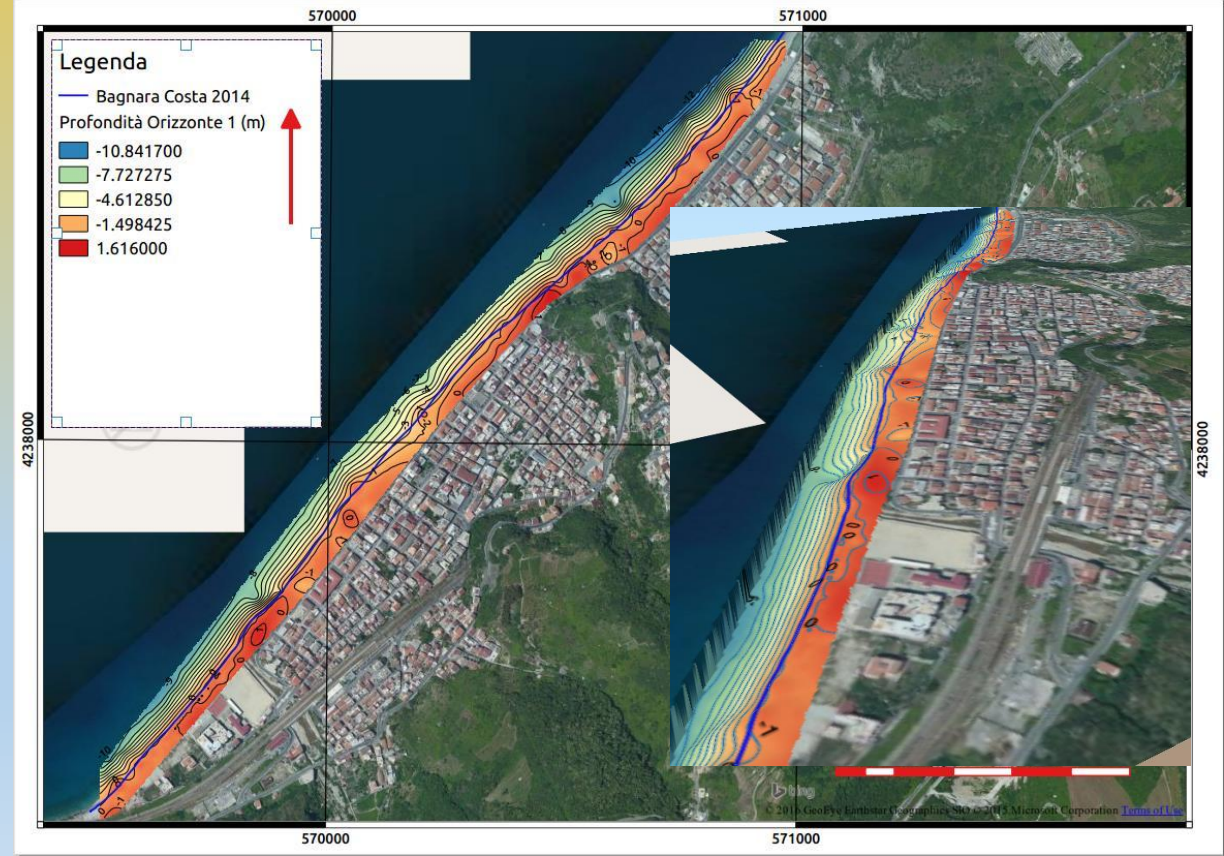
Unità 1 – marino
Unità 2 – marino
Unità 3 – transizione
Substrato cristallino



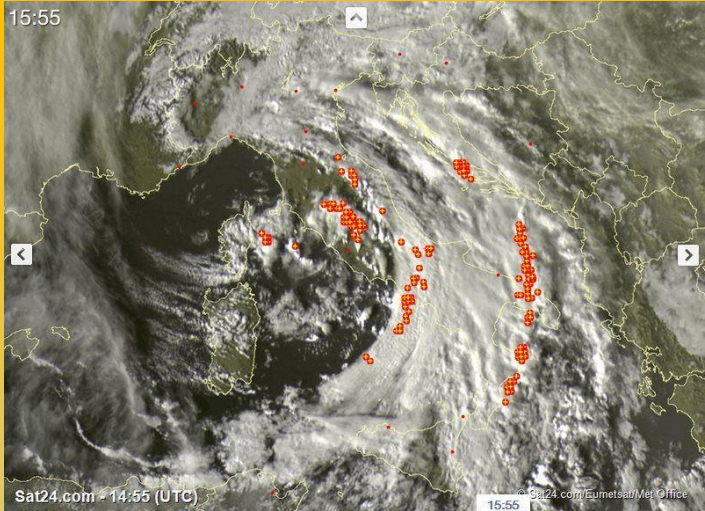
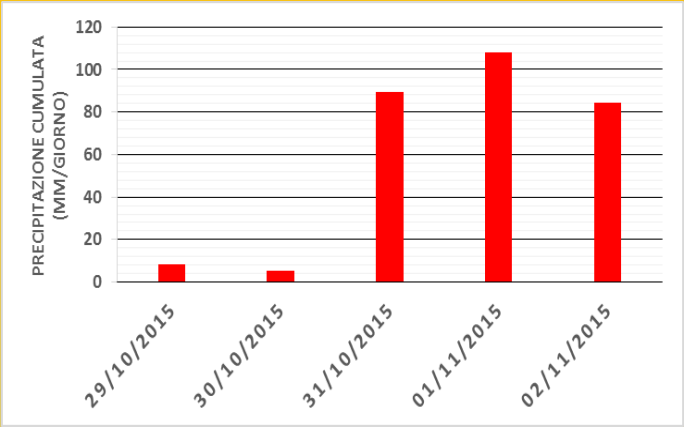
Mappa delle isobate relative alla superficie Unità1/Unità2



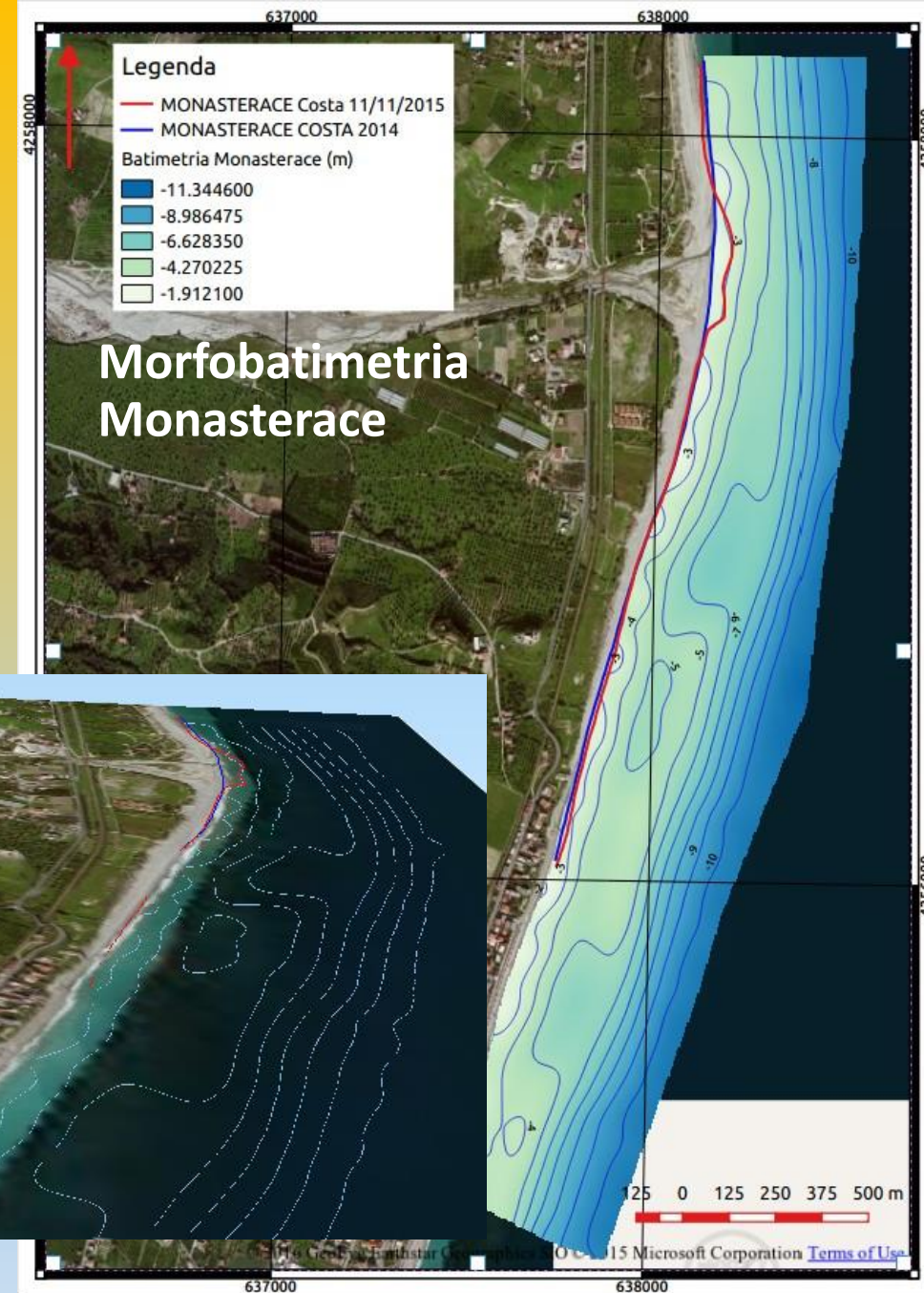
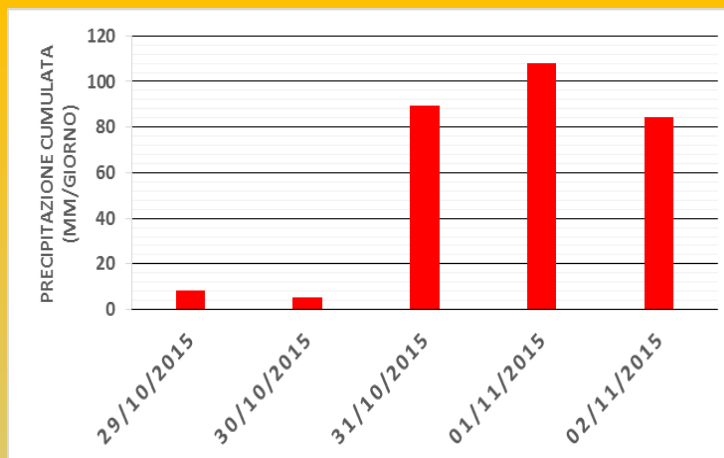
Mappa delle isobate relative alla superficie Unità2/Unità3



Variazioni della linea di costa di Bagnara Calabra pre e post evento calamitoso dal 31/10/2015 al 02/11/2015

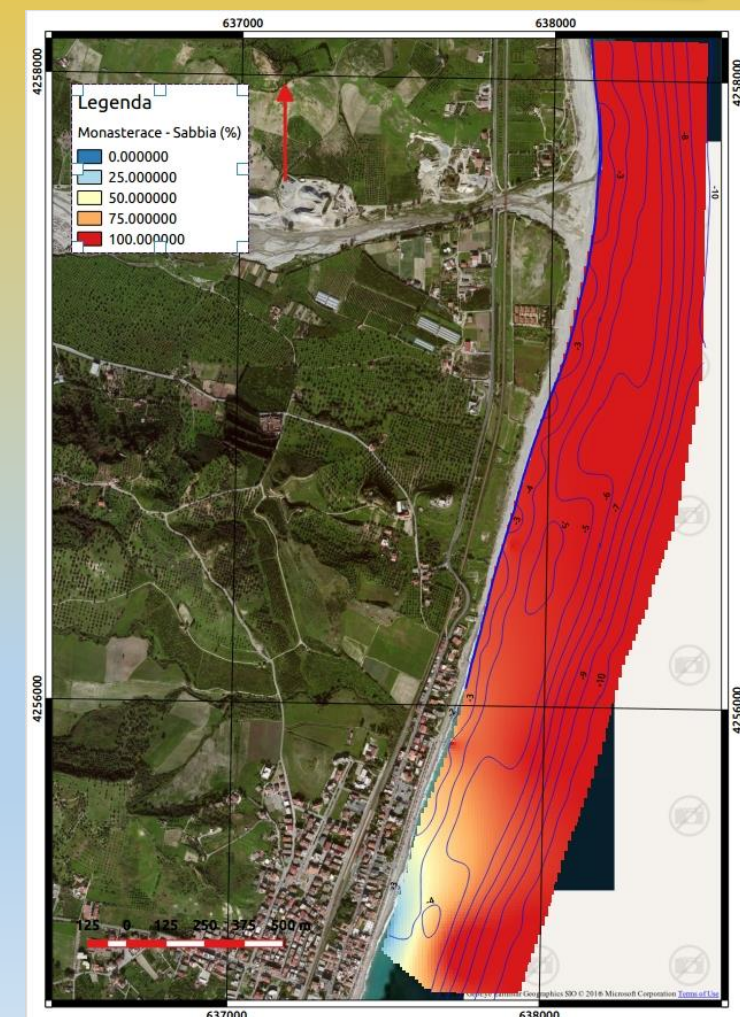
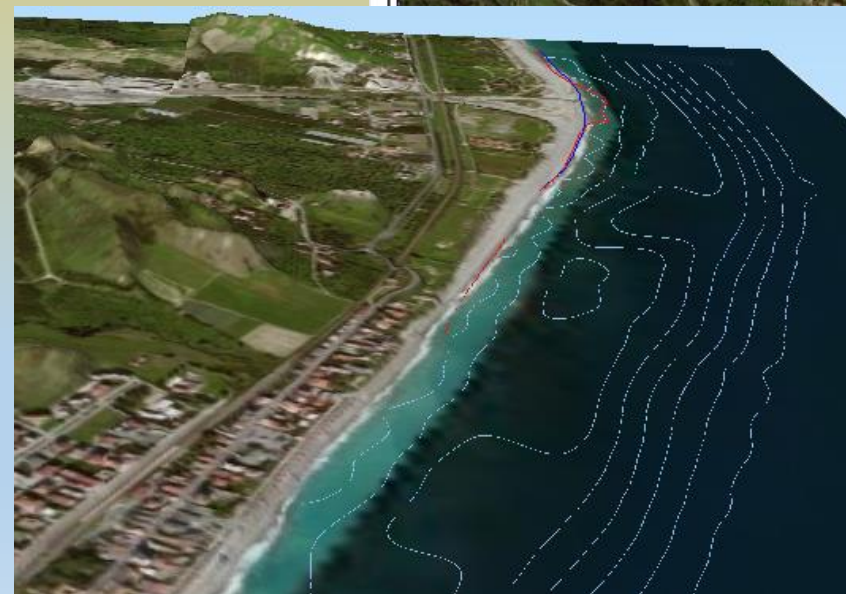


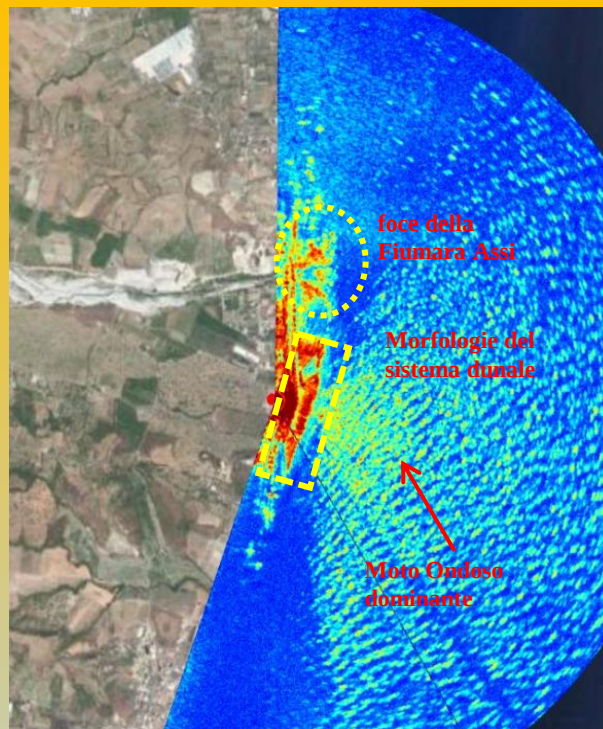
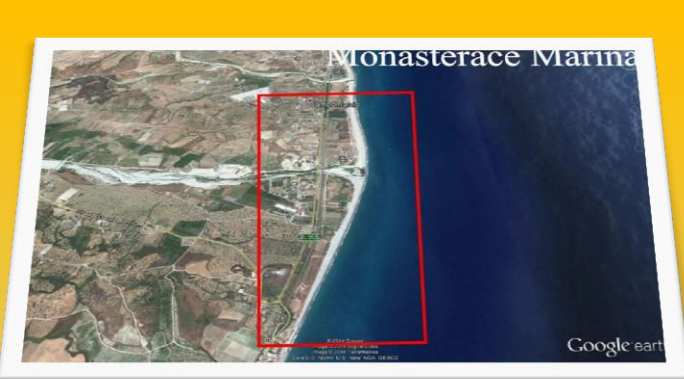
Sfalassà



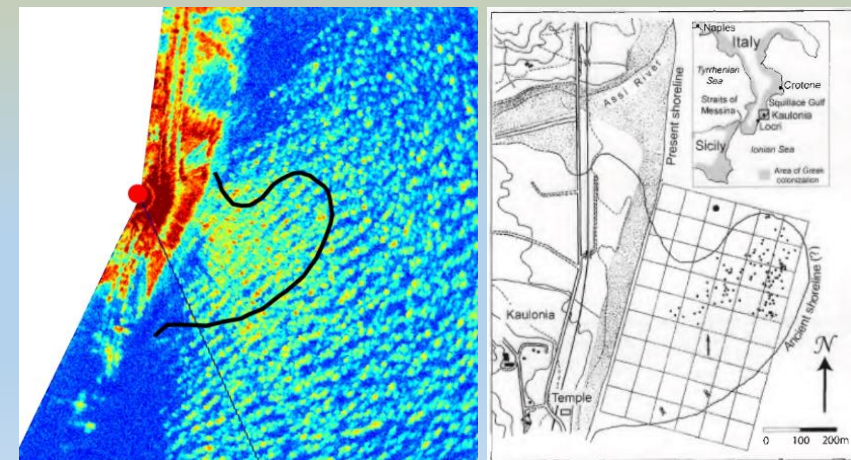
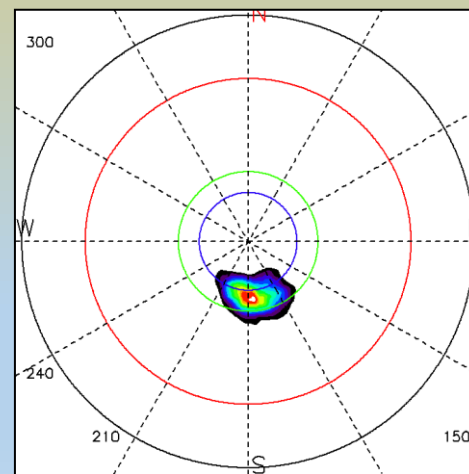
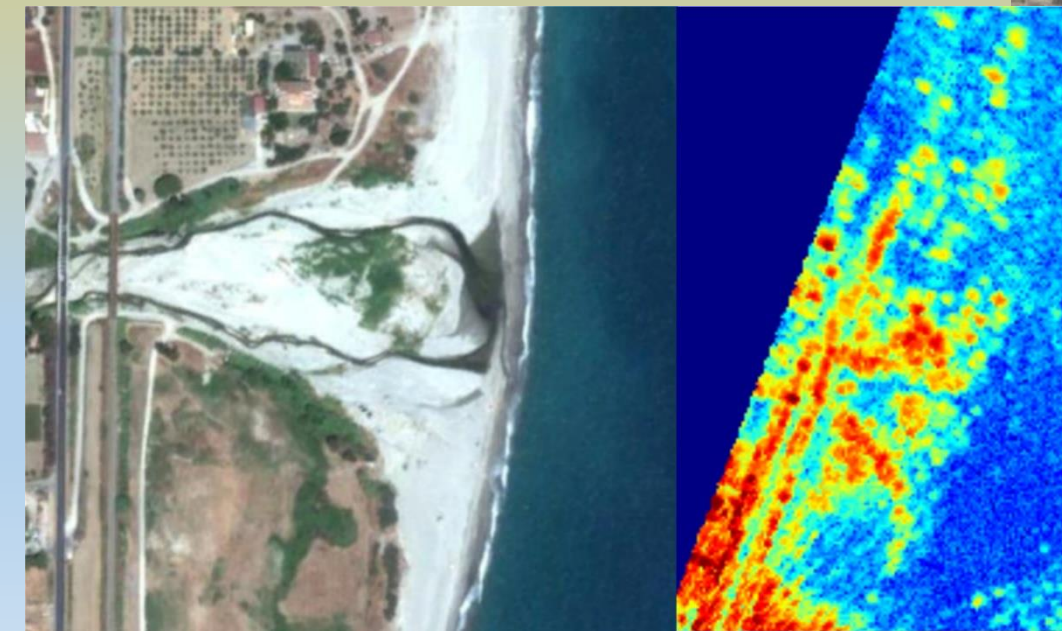
Variazioni della linea di costa di Monasterace pre e post evento calamitoso dal 31/10/2015 al 02/11/2015

Granulometria fondale marino Monasterace



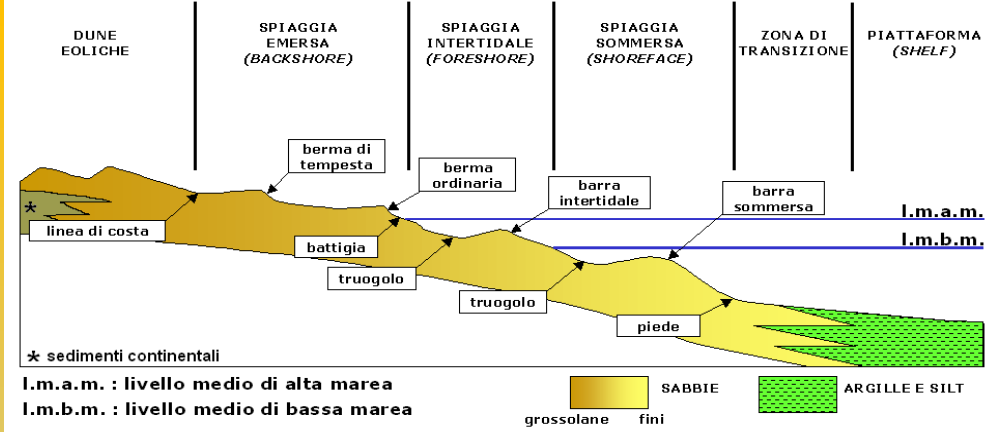


Morfobatimetria Monasterace





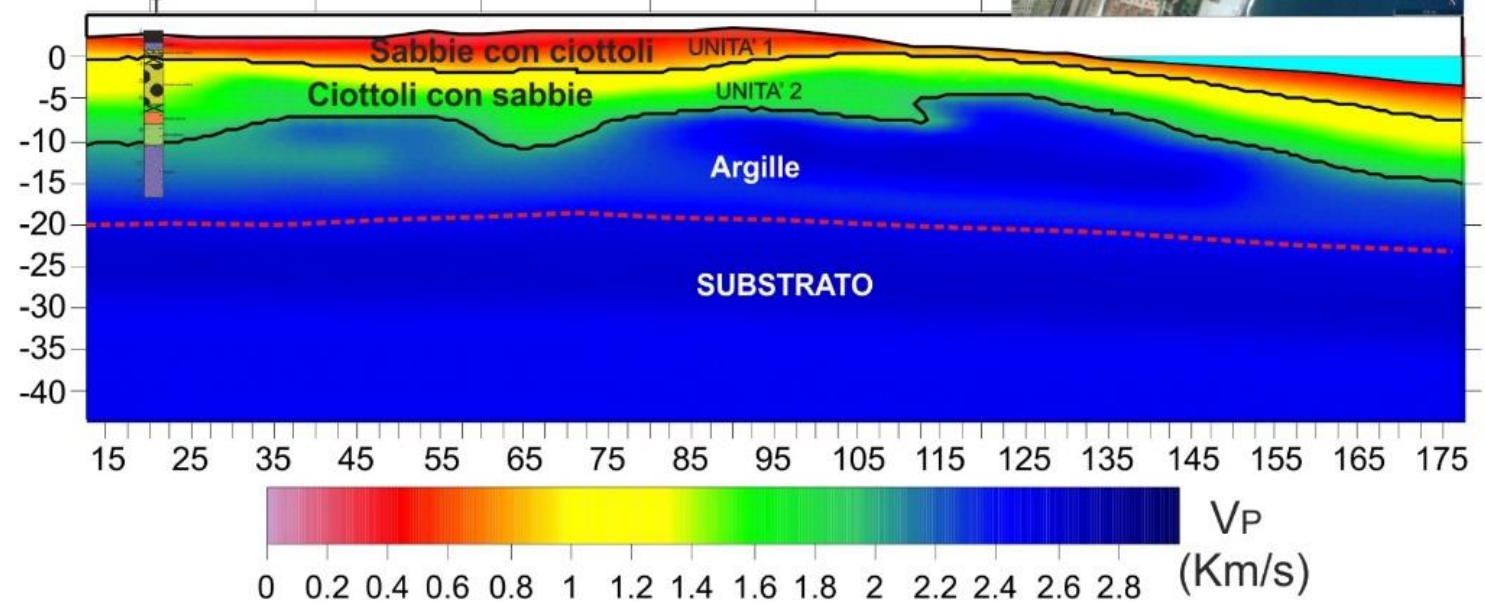
Tomografia sismica terra-mare Monasterace



Assi

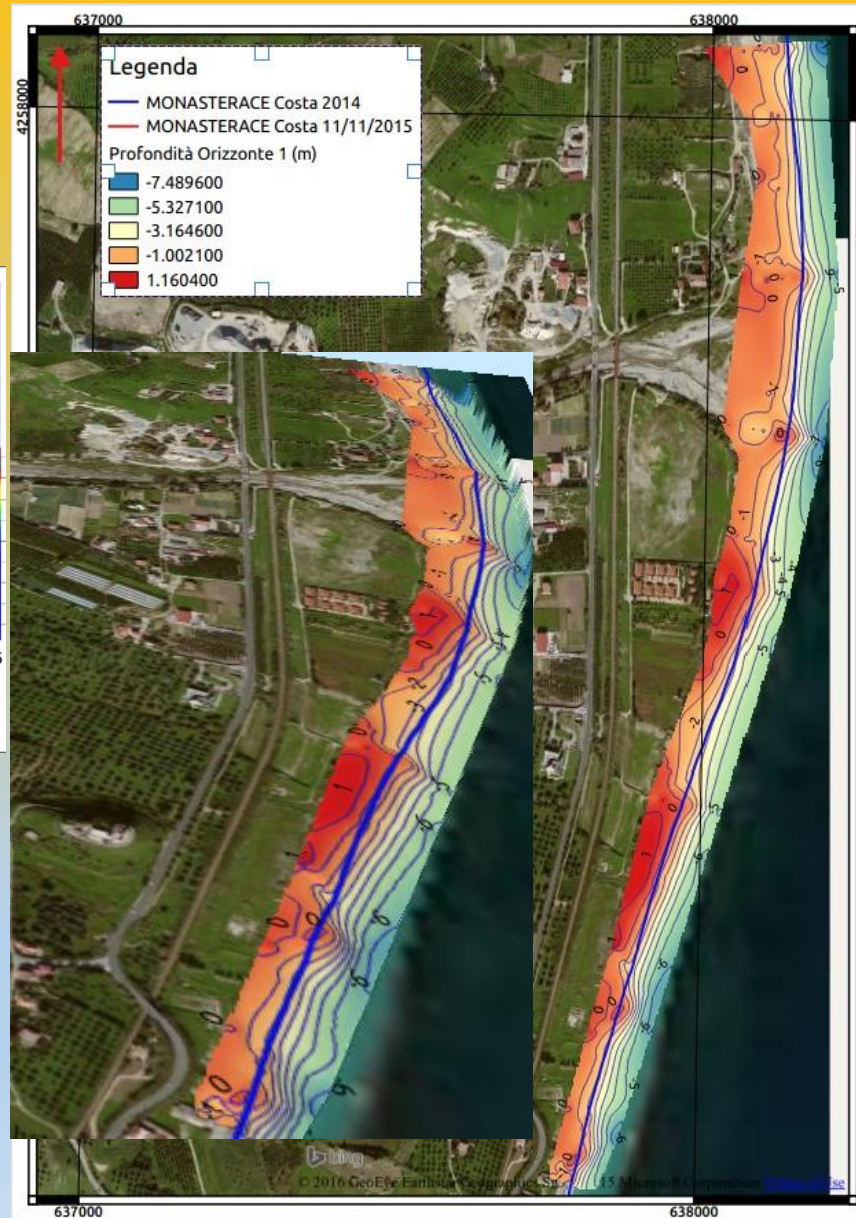
Kaulonia

MON I
(Stanley et al., 2007)

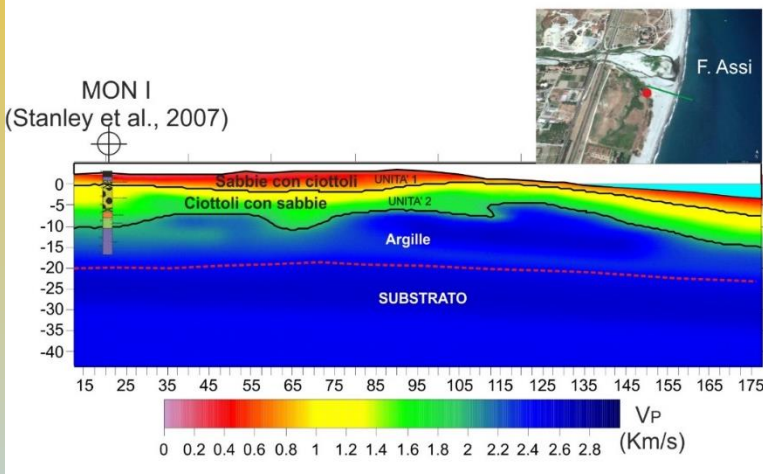
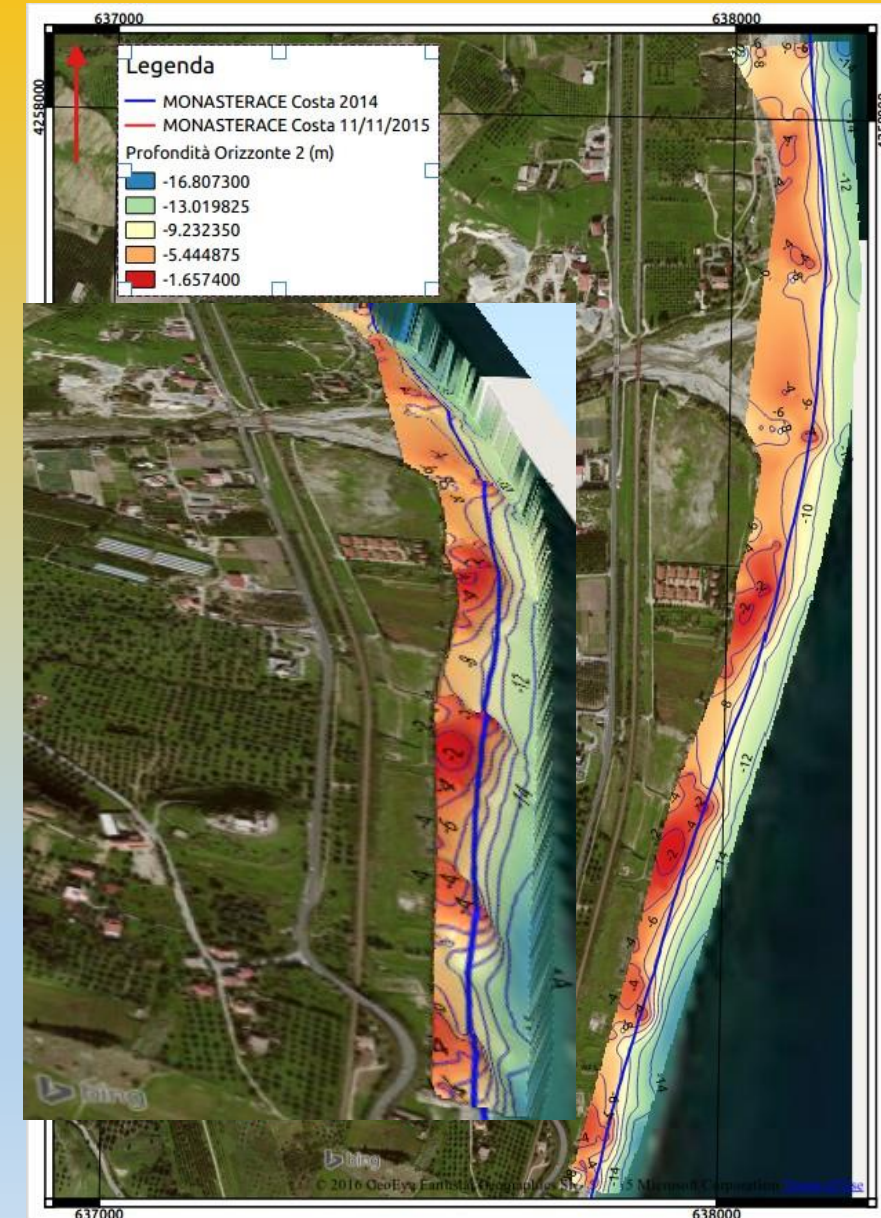




Mappa delle isobate relative alla superficie Unità1/Unità2



Mappa delle isobate relative alla superficie Unità2/Unità3



Le nuove tecnologie e la sperimentazione di nuove tecniche di analisi nei settori marini-costieri possono rappresentare il momento di equilibrio tra la ricerca di base e lo sviluppo sperimentale

