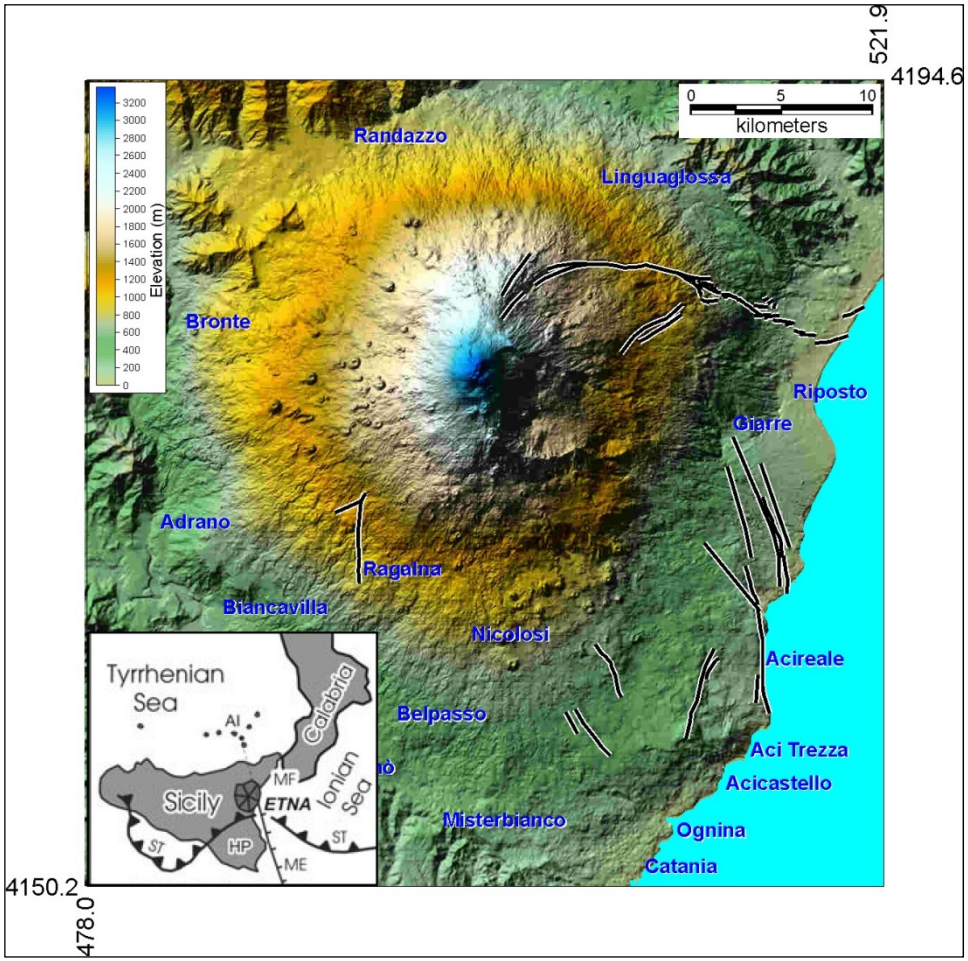
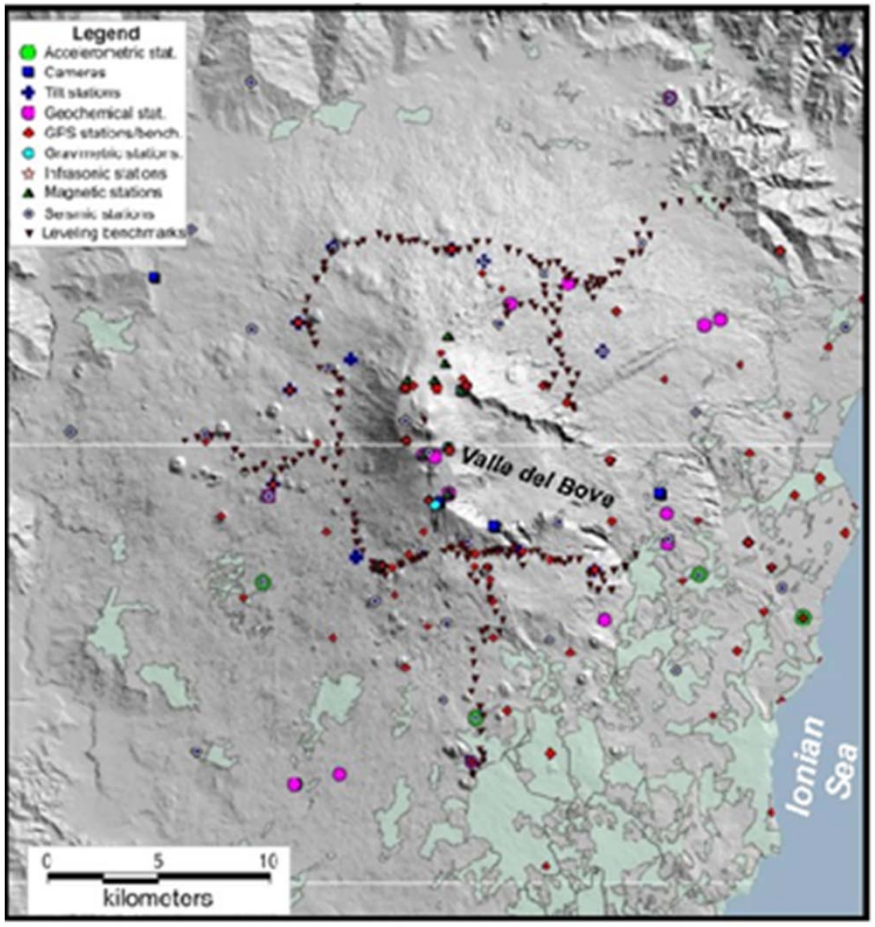
Mt. Etna Supersite

July 2016 – May 2018 Activity

The volcano and monitoring system





Main threatening phenomena

- Volcanic Ash Dispersion
- Lava flows
- Continuous degassing at the summit craters
- Landslides and collapses
- Opening of Eruptive Fractures
- Earthquakes

Mt. Etna in-situ data

Type of data	Data provider	How to access	Type of access
Seismic waveform	*INGV*	*Link to Network Italian Seismic Network Web Service through MED-SUV Portal Search*	*Limited to registered users*
Seismic events	*INGV*	*Link to Network Italian Seismic Network Web Service through MED-SUV Portal Search*	*Limited to registered users*
~~**GPS data**~~	~~*INGV*~~	~~*MED-SUV GSAC server*~~	~~*Limited to registered users*~~
GPS data survey (1994- 2013)	*INGV*	*MED-SUV direct link*	*Public*
~~**GPS coordinates / displacement vectors**~~	~~*INGV*~~	~~*MED-SUV File Manager*~~	~~*Limited to registered users*~~
Hydrophone / OBS waveform	*INGV*	*MED-SUV File Manager*	*Limited to registered users*
Thermal cameras	*INGV*	*MED-SUV File Manager*	*Limited to registered users*
Tilt	*INGV*	*MED-SUV File Manager*	*Limited to registered users*

NEW

Mt. Etna satellite data

Type of data	Data provider	How to access	Type of access
ERS-1/ERS-2	ESA	Direct link to http://eo-virtual-archive4.esa.int/?q=Etna or through the MED-SUV Portal	Registered public
ENVISAT	ESA	Direct link to http://eo-virtual-archive4.esa.int/?q=Etna or through the MED-SUV Portal	Registered public
Sentinel	ESA	Direct link to https://scihub.copernicus.eu or through the MED-SUV Portal	Registered public
TerraSAR-X	DLR	Direct link to https://supersites.eoc.dlr.de or through the MED-SUV Portal	GSNL scientists
COSMO-SkyMed	ASI	Through the ASI server of the MED-SUV Portal	GSNL scientists
RADARSAT-2	CSA	PoC requests access from CSA for individual users; a specific CSA server is under implementation on the MED-SUV Portal	GSNL scientists
Landsat 8	USGS	Direct link to http://earthexplorer.usgs.gov or through the MED-SUV Portal	Registered public
AVHRR	NOAA	Direct link to http://earthexplorer.usgs.gov or a sub-set is available through the MED-SUV Portal File Manager	Registered public
MODIS	NASA	Direct link to http://modis.gsfc.nasa.gov/data/ or a sub-set is available through the MED-SUV Portal File Manager	Open

Misunderstanding in the tasking of TSX

Delay in signing agreement

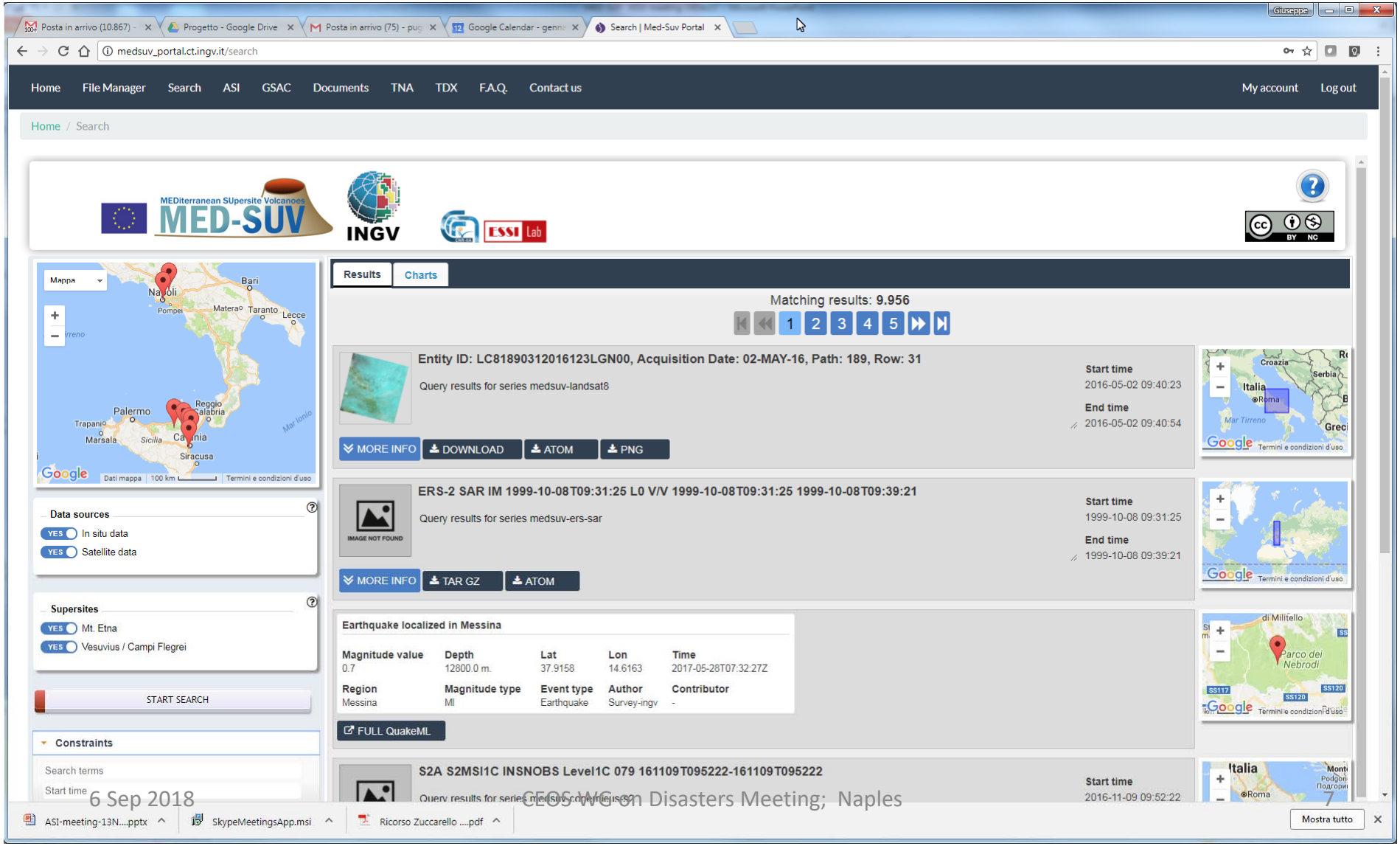
MED-SUV e-Infrastructure

Supersites accessible through the e-infrastructure

- **Mt. Etna,**
- **Vesuvius and Campi Flegrei**

http://medsuv_portal.ct.ingv.it/

MED-SUV data portal



Mt. Etna results

The December 2015 eruption Bonforte, et al. (2017), Fringe 2017 Workshop, Helsinky

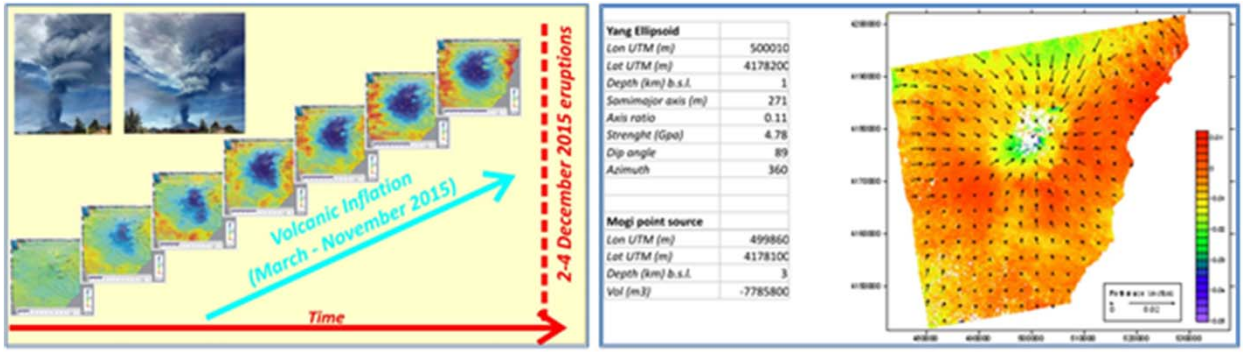


Figure 1. Interferograms showing the inflation before the "Voragine" crater explosive activity (left); results of the inversion of the integrated deformation pattern relevant to the "Voragine" activity (right side)

Long-term (2003-2010) deformation for human settlement risk assessment

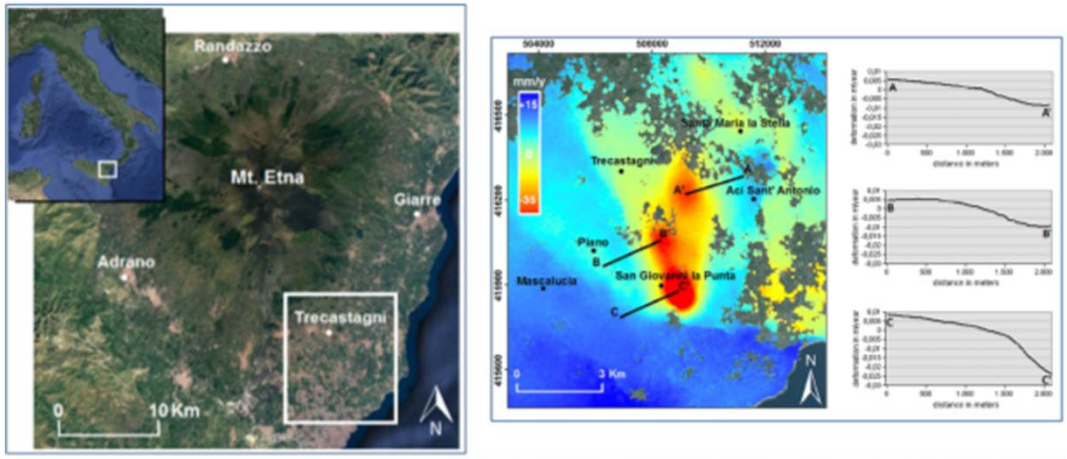


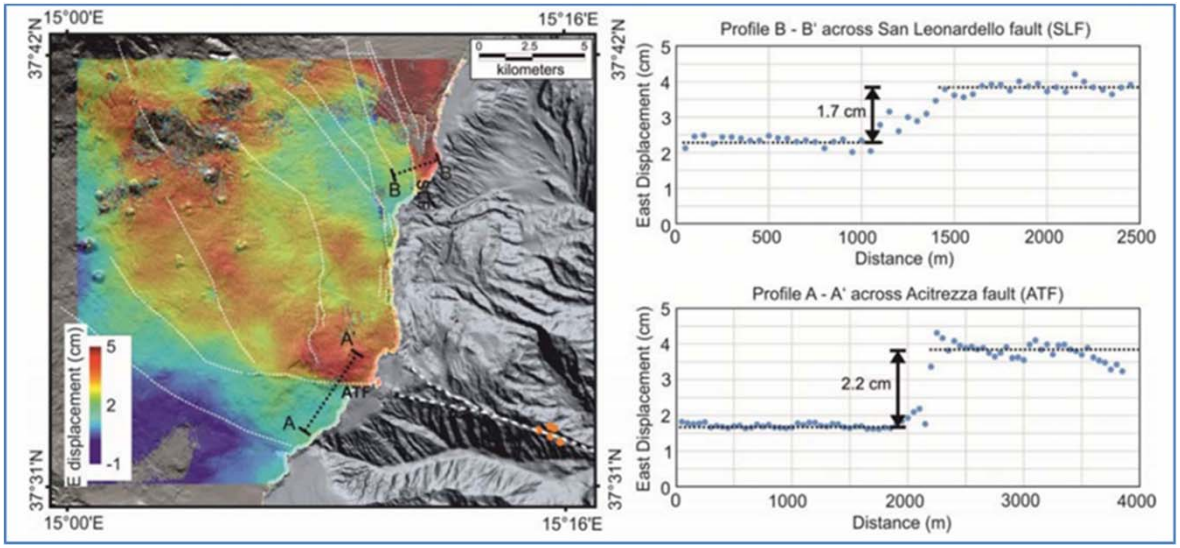
Figure 1. Location map of the south-eastern flank of Mt. Etna and investigated area (left); IS LOS deformation rate from ENVISAT images, from 2003 to 2010; Sections AA', BB', CC' are shown as black lines along with their corresponding surface deformation diagrams (right).

Mitoulak et al., submitted to the European Journal of Remote Sensing)

Limited number of resuts
Reasons? to the lack of the vigorous eruptive activity and to the concomitant ending of the EC FP7 MED-SUV project….

…. Promotion of the cross-domain studies

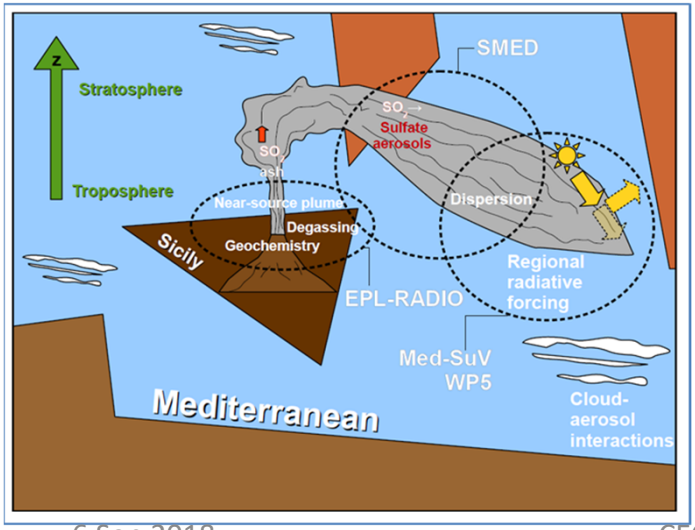
Mt. Etna results



Integration between in-land and off-shore deformation data

Eastward displacement of the south-eastern flank of Mount Etna from April 2016 to July 2017. The map is obtained by integrating GPS and InSAR analysis using the SISTEM method. White dashed lines show principal faults. Orange dots show locations of the seafloor geodetic transponders.

Urlaub, et al. (2018), Science Advances, in press

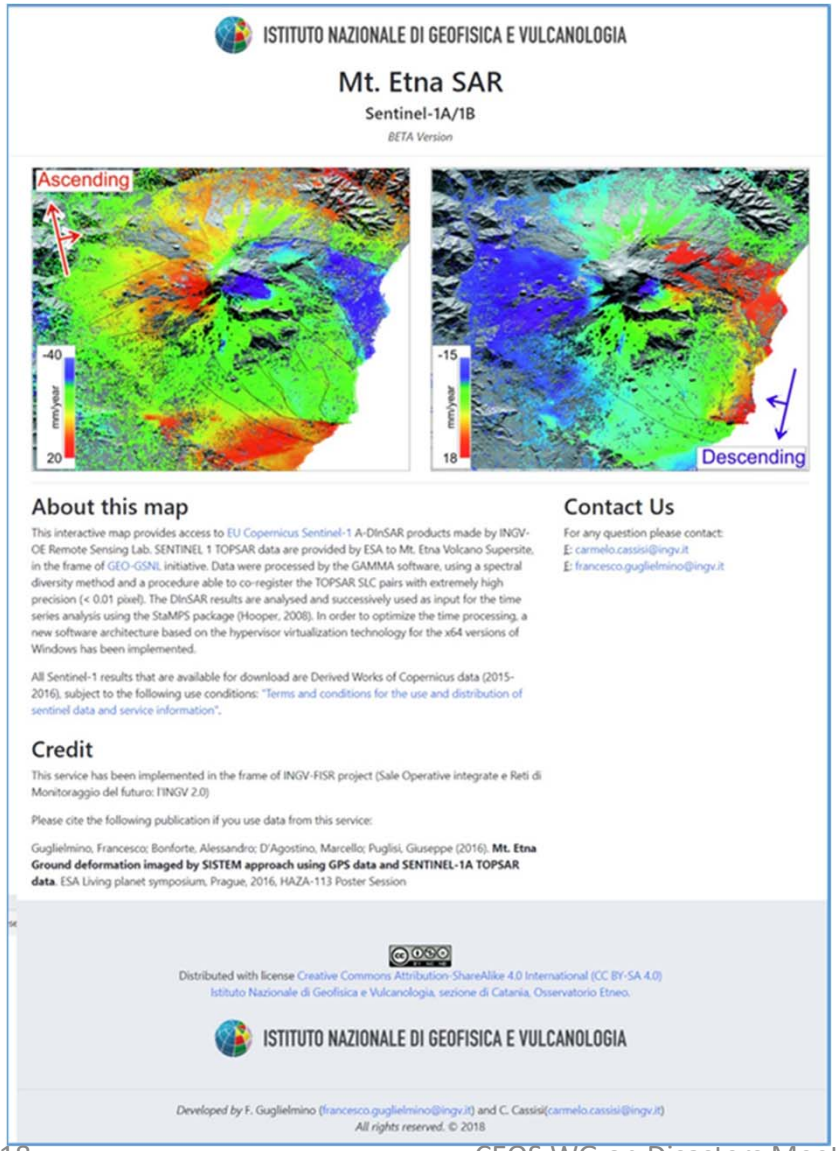


Characterization of the magmatic feeding system of Mt. Etna by gas chemical composition and aerosol burden in the frame work of the ENVRIPlus project physical access (TNA) to M. Etna Supersite.
This study promoted the researcher to use S5 to compare the in-situ & EO data with models.

&
New products %

Terray et al., 2018, MDPI Geosciences.

Mt. Etna results – new proc



http://medsuv_portal.ct.ingv.it