



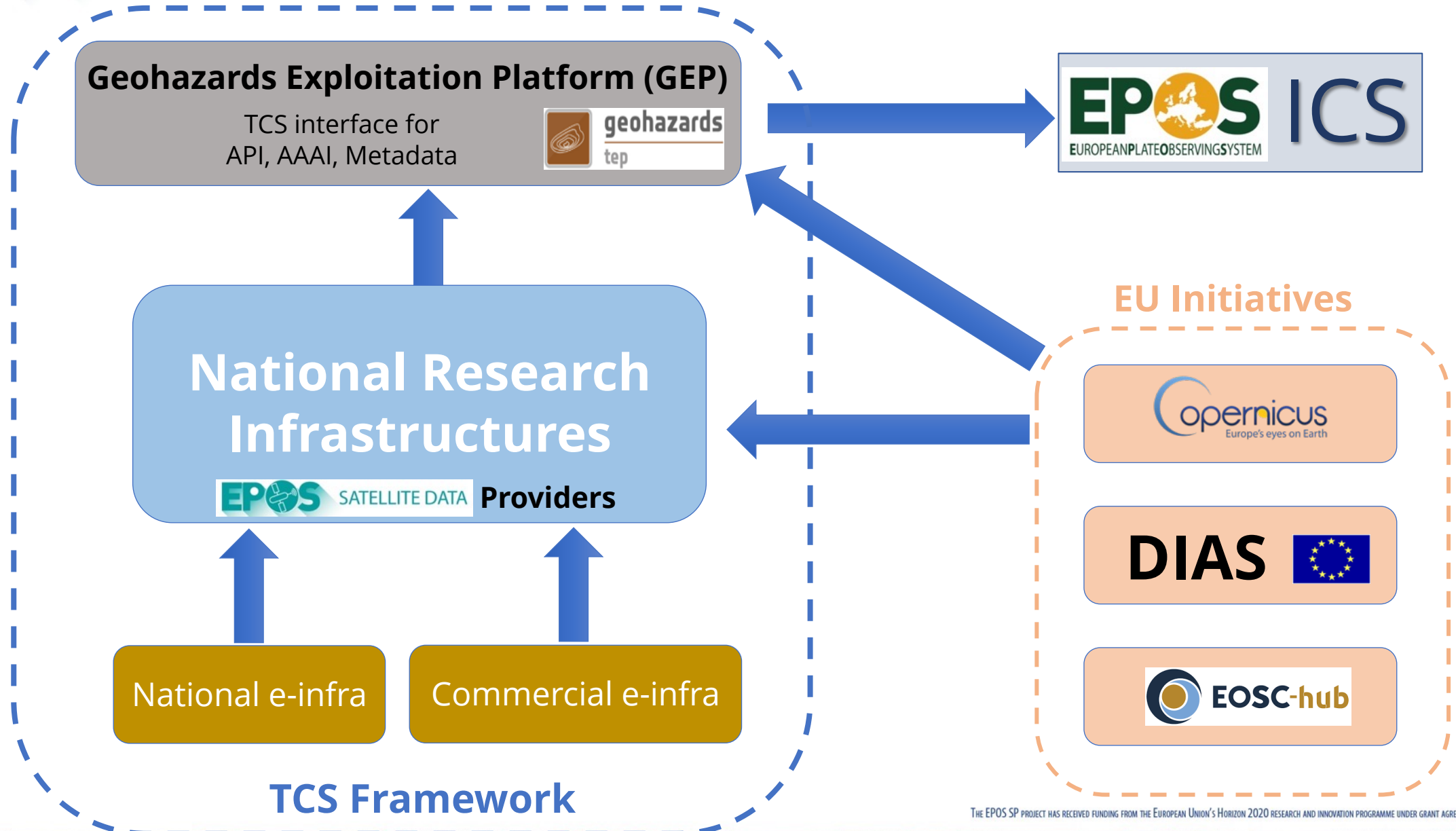
Thematic Core Service Satellite Data

Michele Manunta

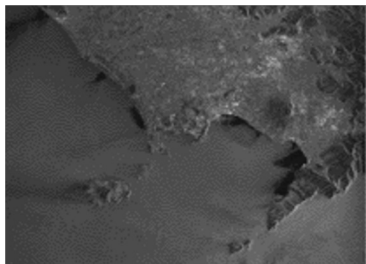
TCS Satellite Data Director

CNR-IREA – Italy – email: manunta.m@irea.cnr.it

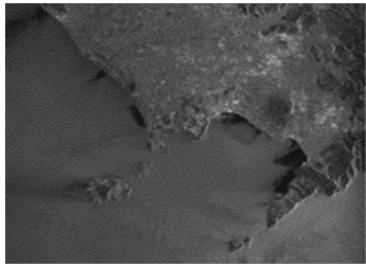
with the contribution of all the TCS members



SAR scene @ **TO MASTER**

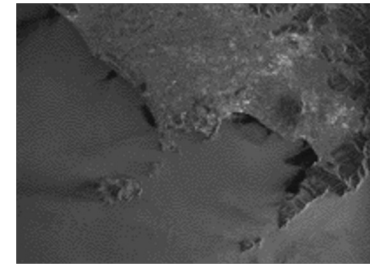


SAR scene @ **T0 MASTER**



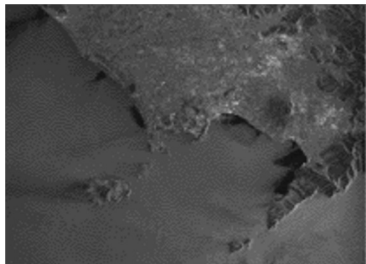
Baseline

SAR scene @ **T1 SLAVE**

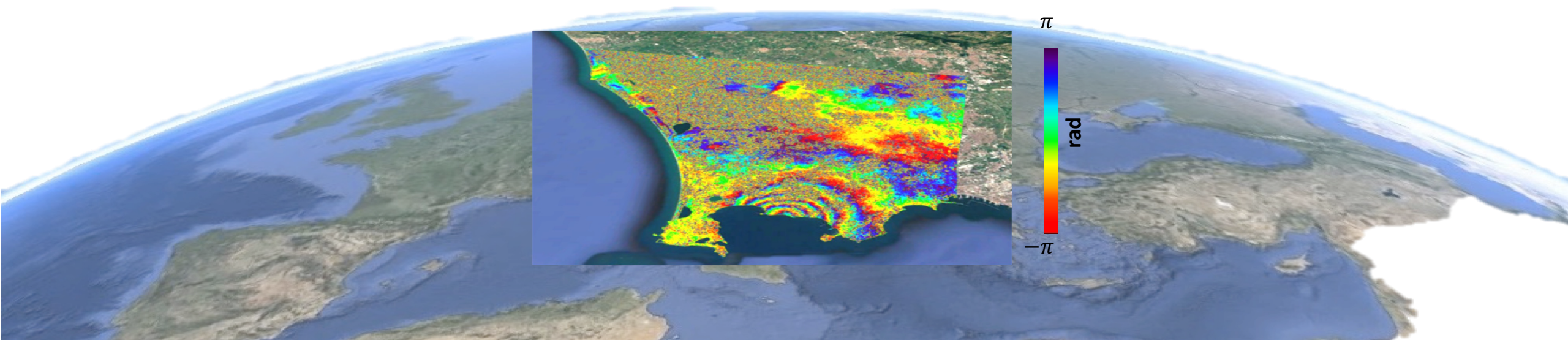
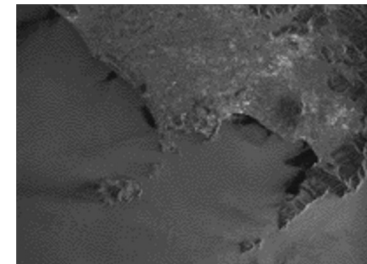


Ground Displacements Measured from the Space

SAR scene @ **T0 MASTER**

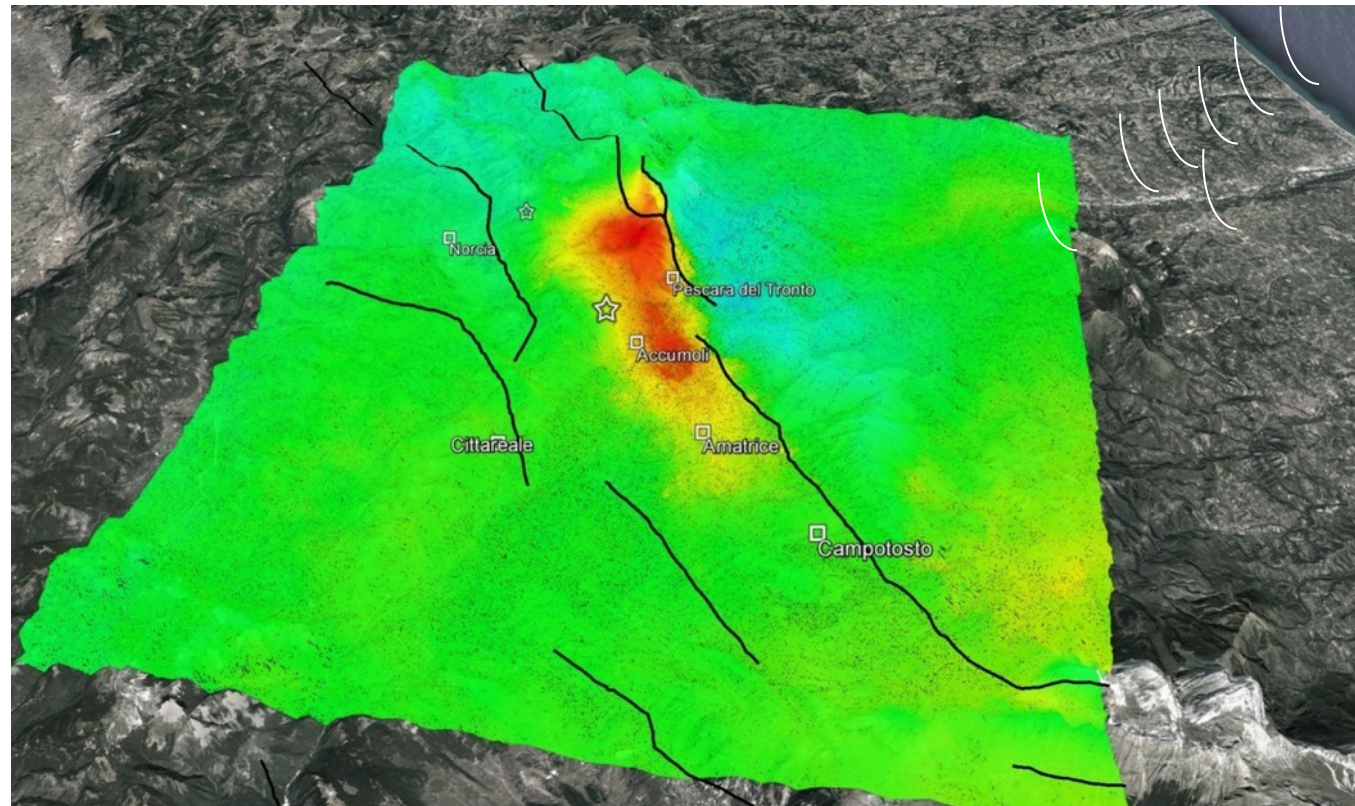


SAR scene @ **T1 SLAVE**



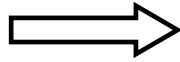
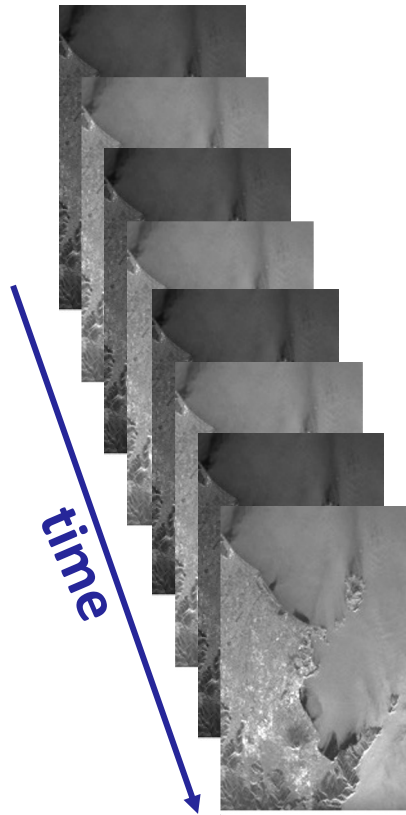
With the **DInSAR** (or **InSAR**) technique we can measure ground displacements with centimetre to millimetre accuracy by combining two SAR acquisitions collected at different times

Displacement map relevant to the 2016 Amatrice earthquake (Italy)

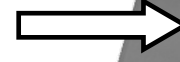
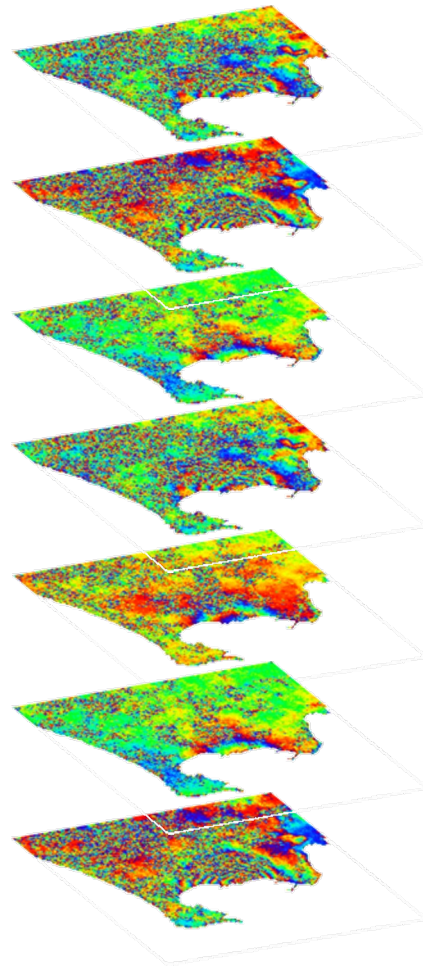


<-20  >20
LOS Deformation [cm]

SAR Images

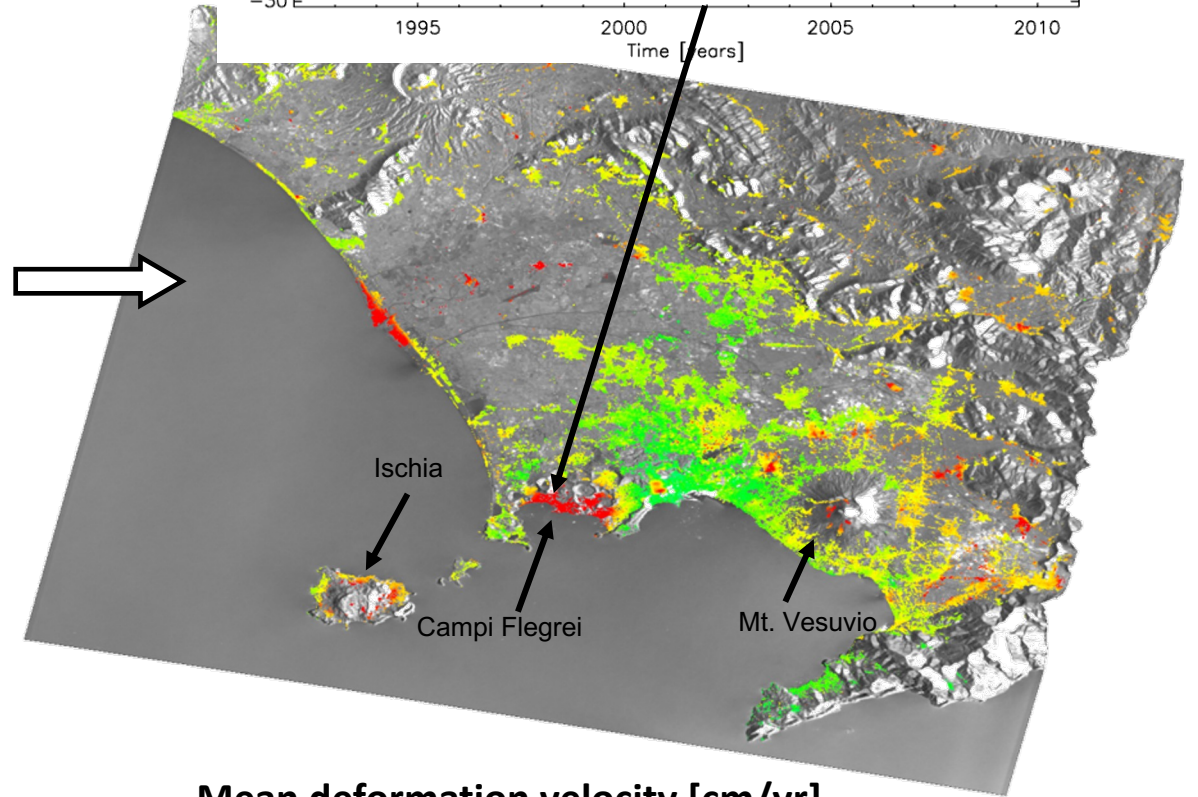
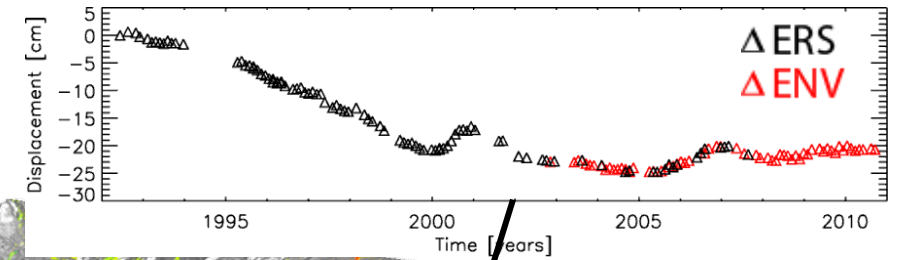


Interferograms



Advanced DInSAR Products

ERS/**ENVISAT** images (1992 – 2010)



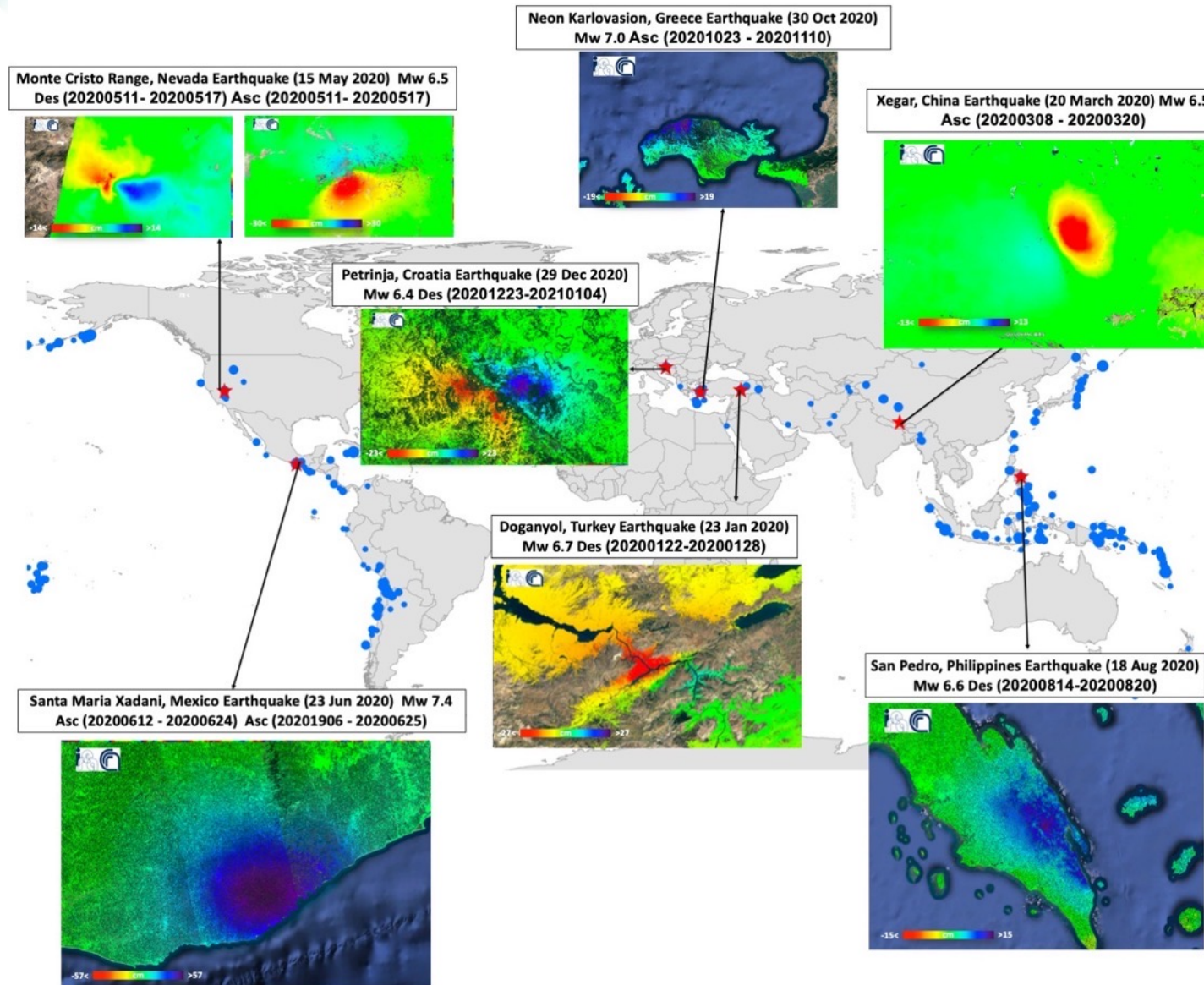
Mean deformation velocity [cm/yr]



EPOSAR service

Copernicus Programme
provides quasi-real time satellite
images. EPOS is exploiting this
service to make available to the
user community updated
displacements maps for each
seismic events ($M_w > 5$) that
occurs on land.

EPOSAR works at global scale.

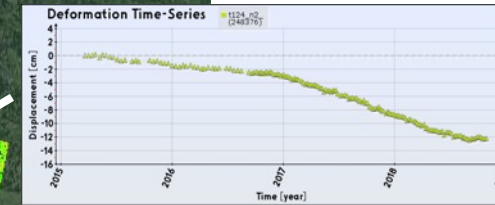
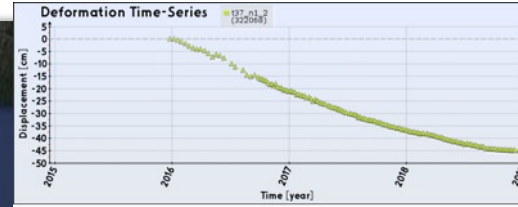
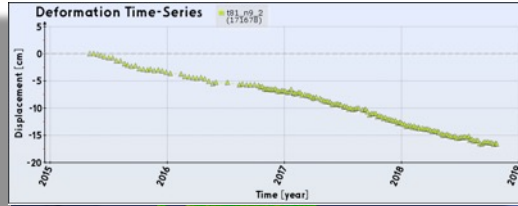
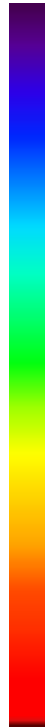


EPOSAR service

Mean deformation velocity [cm/year]

> 3

< -3



GDM service (Ground Deformation Monitoring processing service)

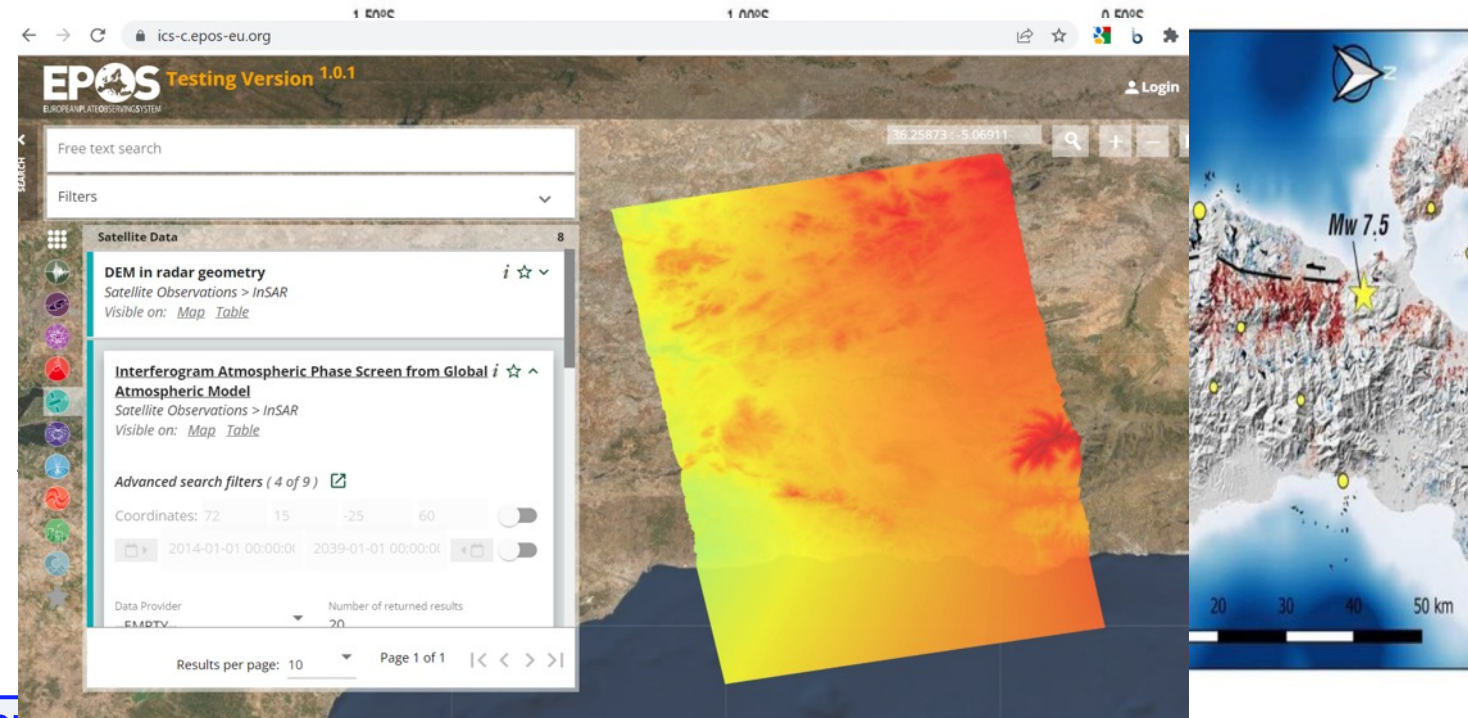
French contributions coordinated by CNRS /ForM@Ter



GDM offer flexibility in term of spatial and temporal coverage, with a wider range of available products.

GDM-SAR product specificities:

- Radar and ground geometries available
- Lookup table from radar coordinates to ground coordinates
- interferogram Atmospheric Phase Screen from atmo model (ECMWF)
- Quality indicator of time series analysis (network misclosure, temporal coherence...)



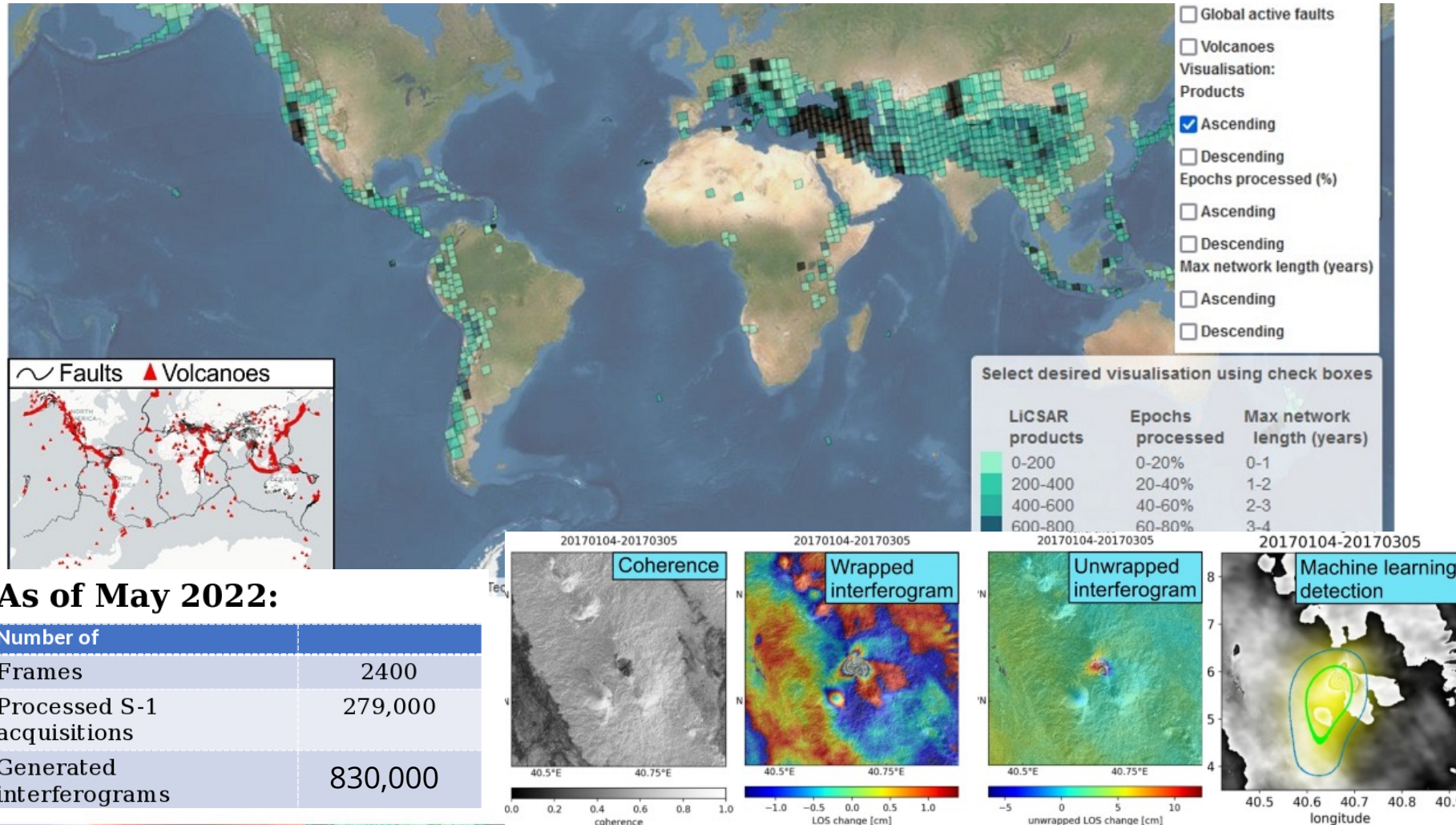


COMET-LiCS Sentinel-1 InSAR portal

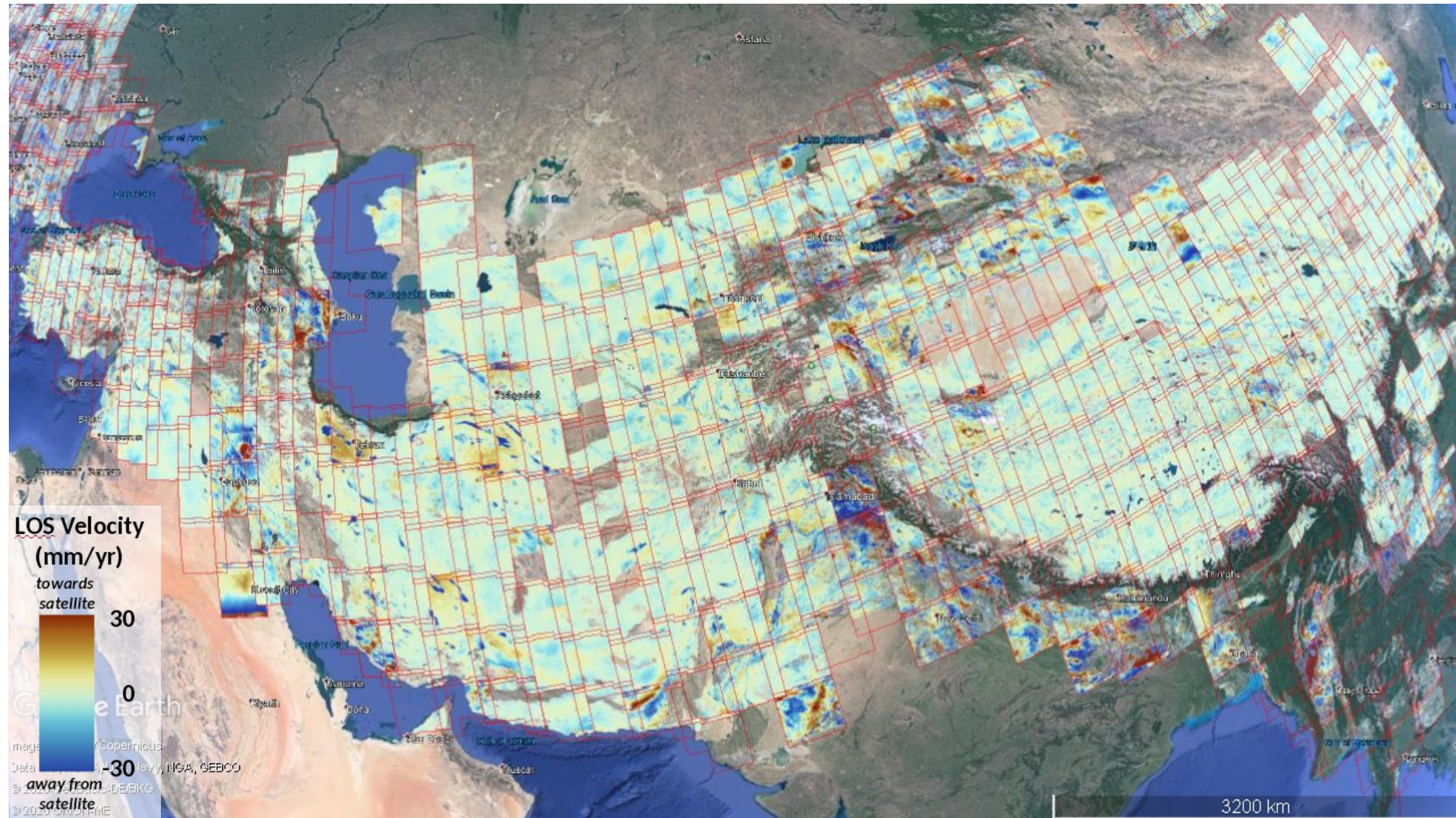
<https://comet.nerc.ac.uk/comet-lics-portal>



EUROVOLC



LOS velocity over Alpine-Himalayan Belt from Sentinel-1 interferograms





TCS interface for metadata, API and AAI:
Metadata: ISO 19115(-2) & OGC 10-157r3
Data Product discovery: OpenSearch (CEOS OpenSearch BP)
Data Product retrieval: HTTPS



Thematic Apps

Click to find out the existing thematic applications

[View apps](#)



Communities

The Geohazards platform gather activities from active groups of users

[View Communities](#)



Forum

Go to the Geohazards community forum

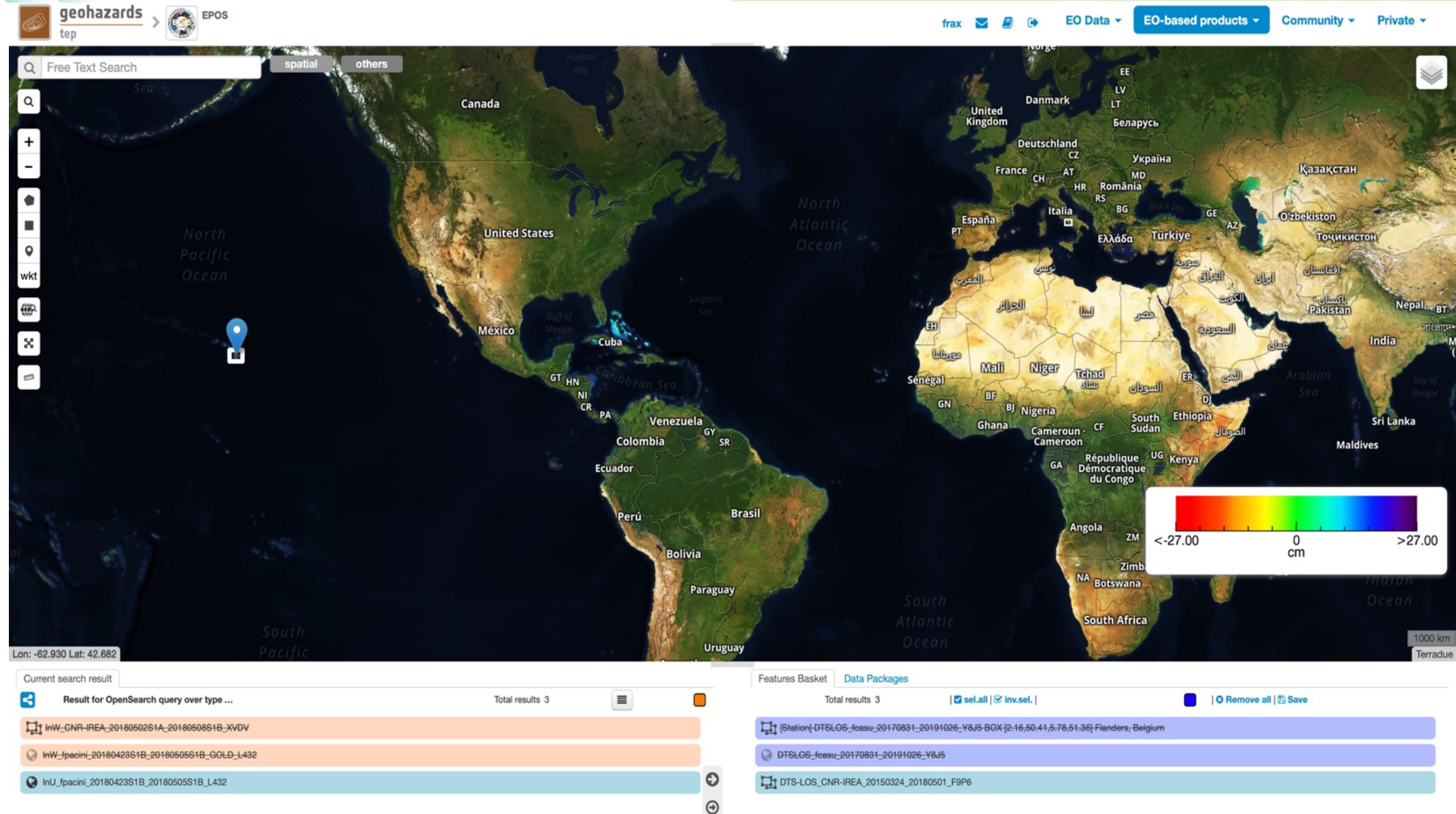
[View Forum](#)

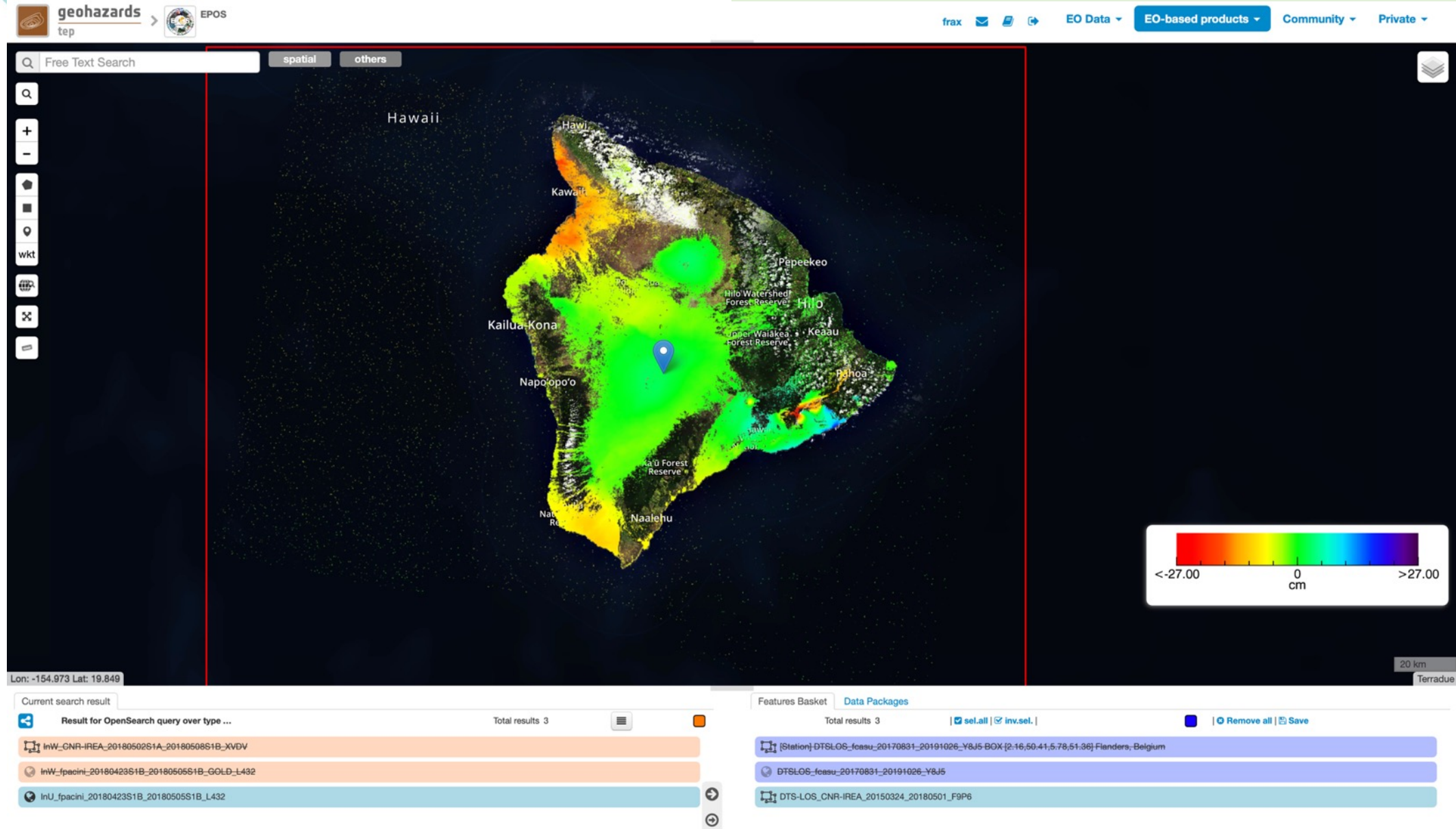


Analytics

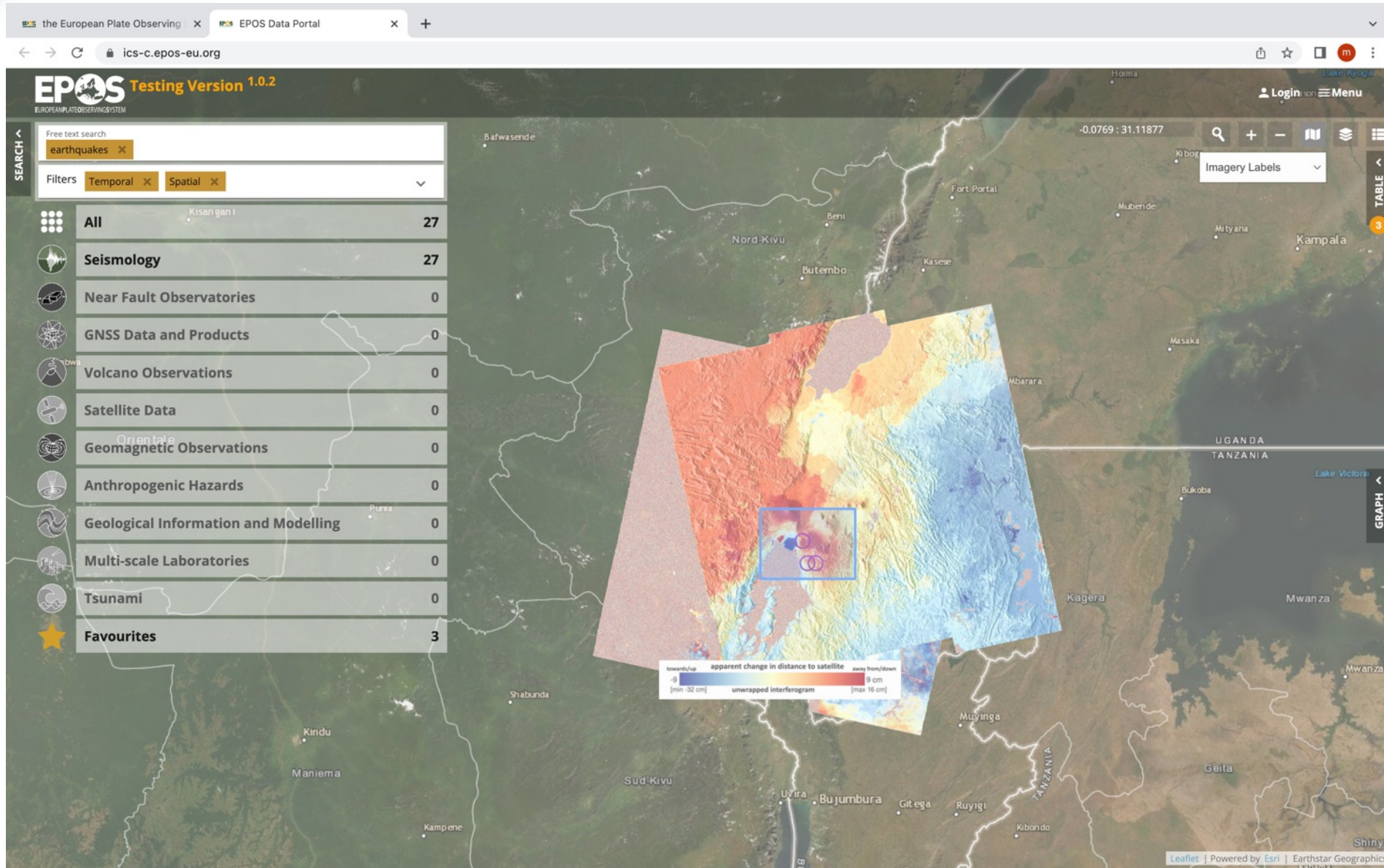
Find out what is your usage of the platform

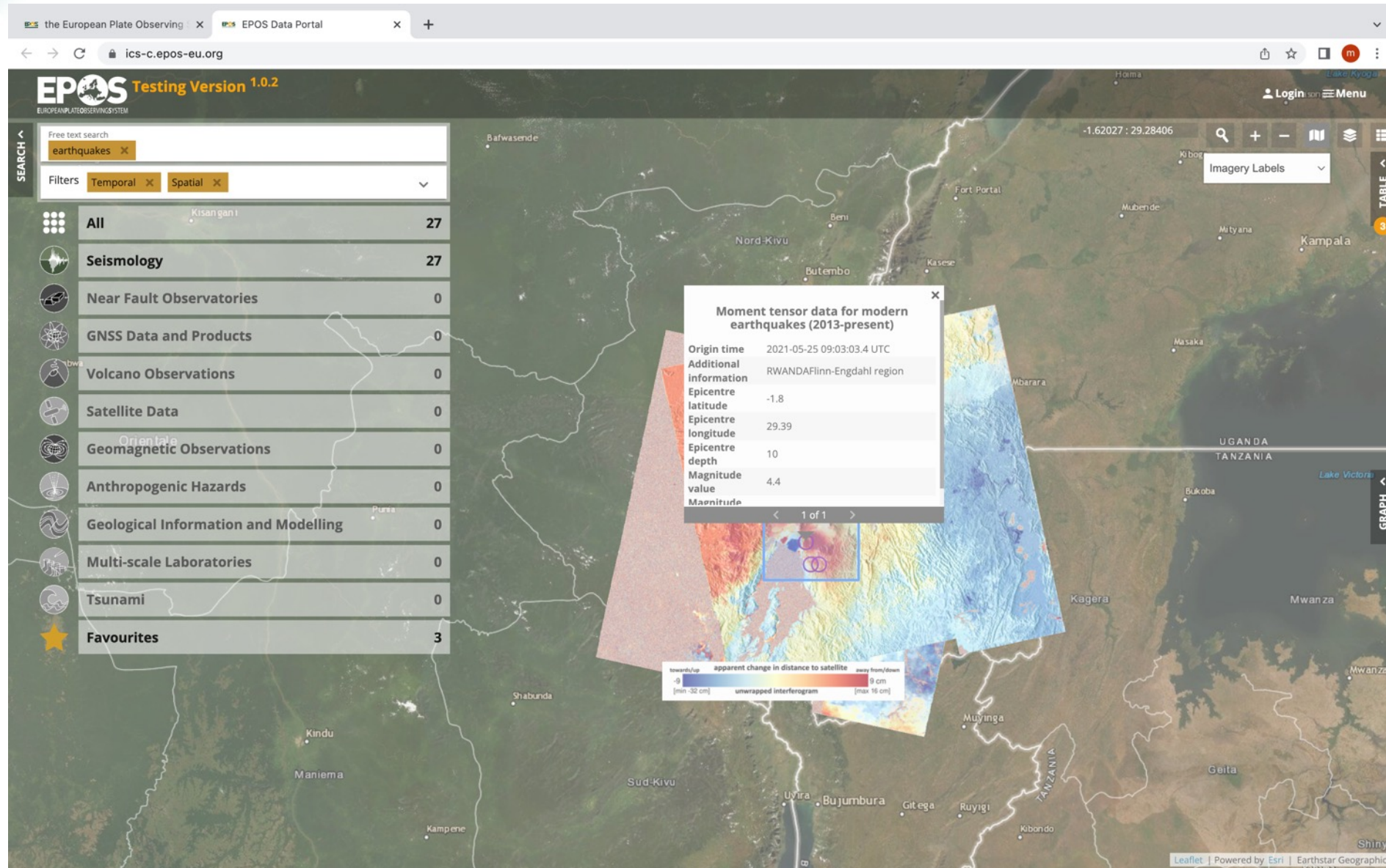
[View activities](#)











Thank you!!!

