

OIBA
ORDINE DEGLI INGEGNERI
della Provincia di Bari



ORDINE DEI GEOLOGI
DELLA PUGLIA



Consiglio Nazionale
delle Ricerche

planetek
italia

Servizi geo-informativi per le smart cities e corsi di formazione professionale

Analisi preliminare delle deformazioni sull'area costiera a sud di Torre a Mare (Bari)

Alberto Refice

Istituto per Il Rilevamento Elettromagnetico dell'Ambiente

Consiglio Nazionale delle Ricerche

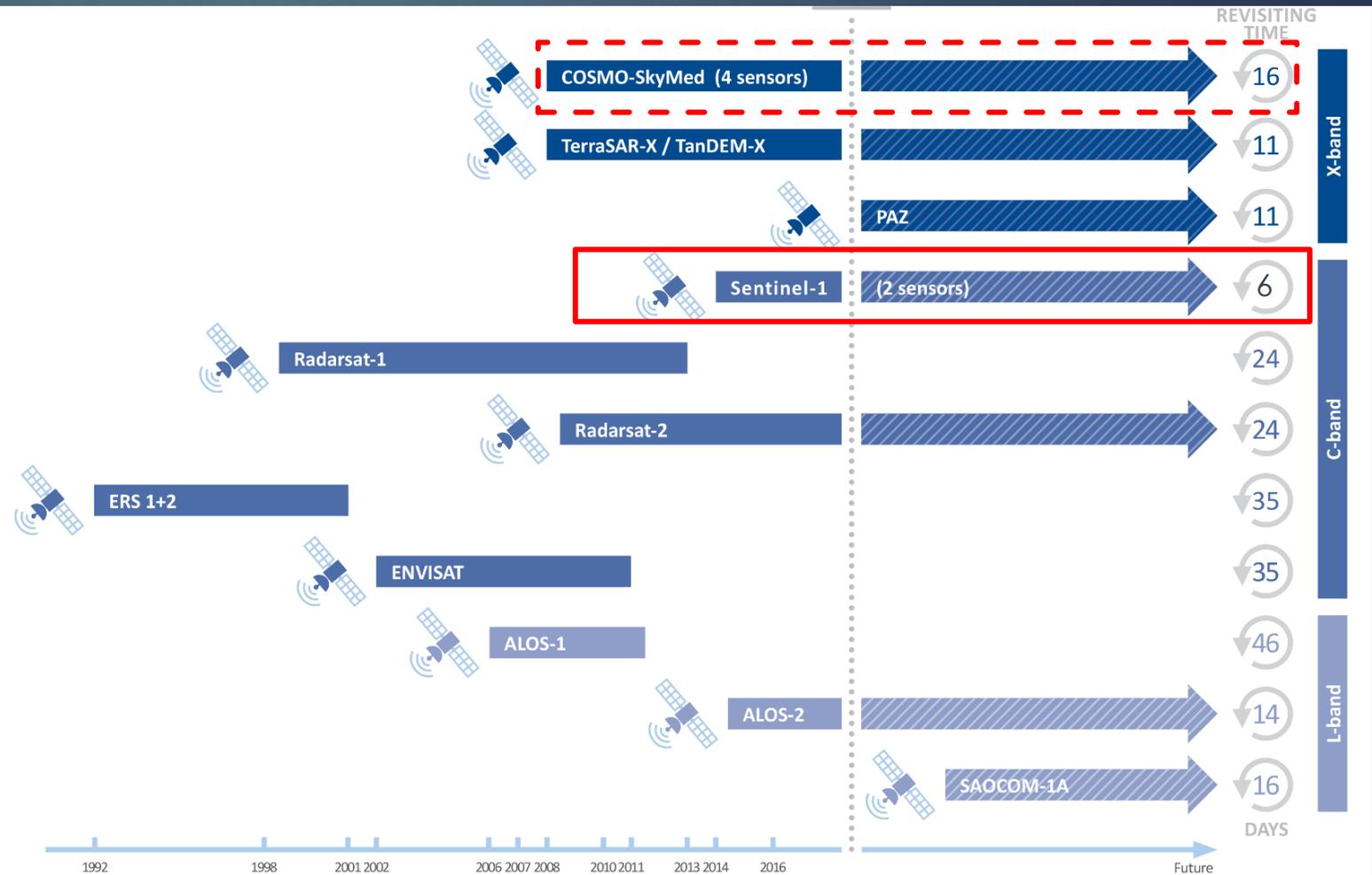
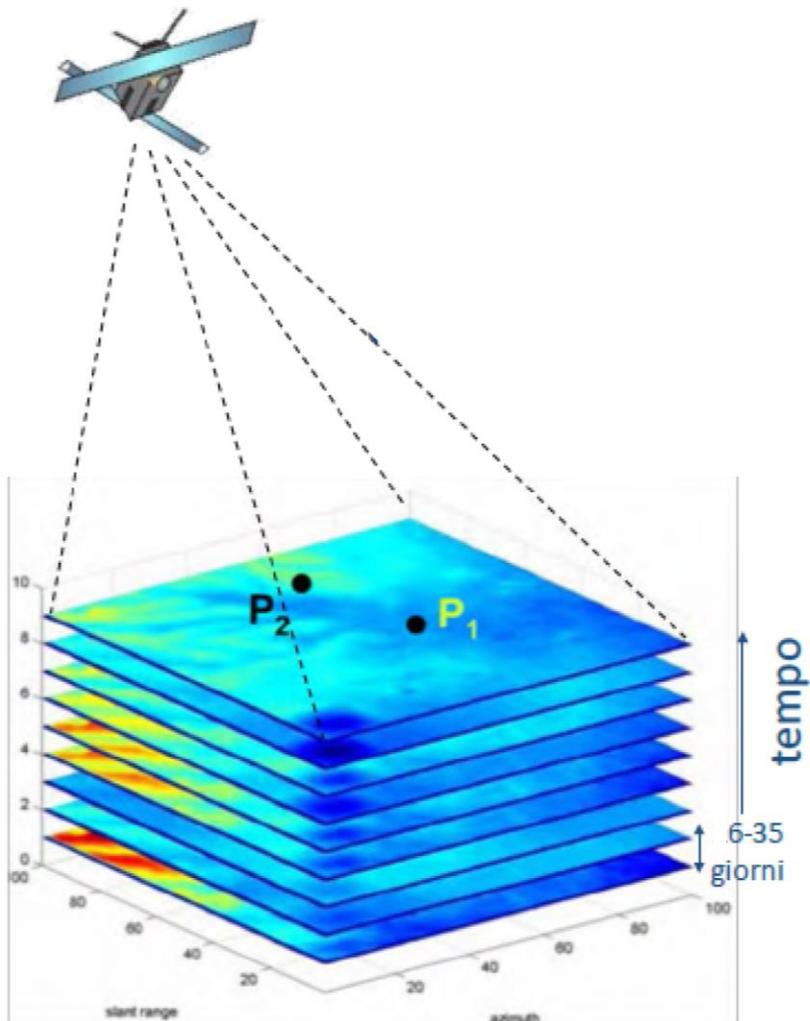
IREA-CNR, Bari

Dati

- ▶ Accesso Rheticus®
- ▶ PS/DS/Amplitudes Sentinel-1 Rheticus® MAY 2015 – MAR 2019 - shp
- ▶ PS/DS/Amplitudes Sentinel-1 Rheticus® MAY 2015 – NOV 2020 - shp
- ▶ Dati da campagne al suolo:
 - ▶ Kml area campione
 - ▶ Stato del sito campione (pdf)
 - ▶ "Progetto" (pdf) + foto
- ▶ Studi relativi alla valutazione della Pericolosità' e rischio di instabilità' delle coste alte Della regione puglia – excerpt: "studio metodologico della pericolosità" (pdf)

Area più piccola
ma copre
comunque il sito
campione

Multi-Temporal Interferometric Synthetic Aperture Radar (MTInSAR)



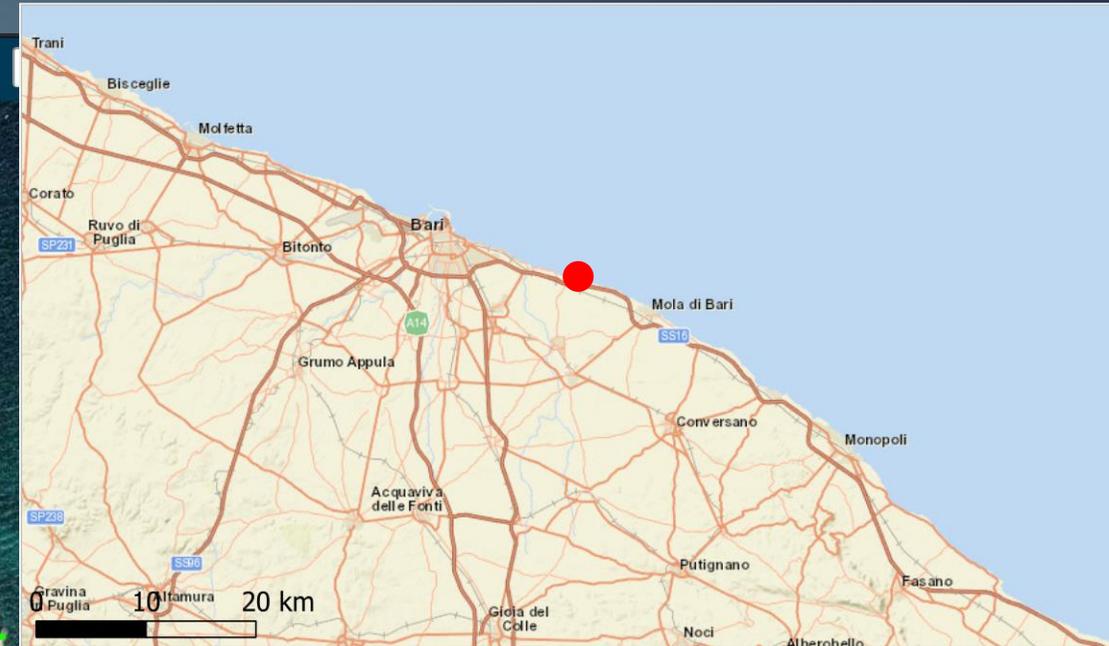
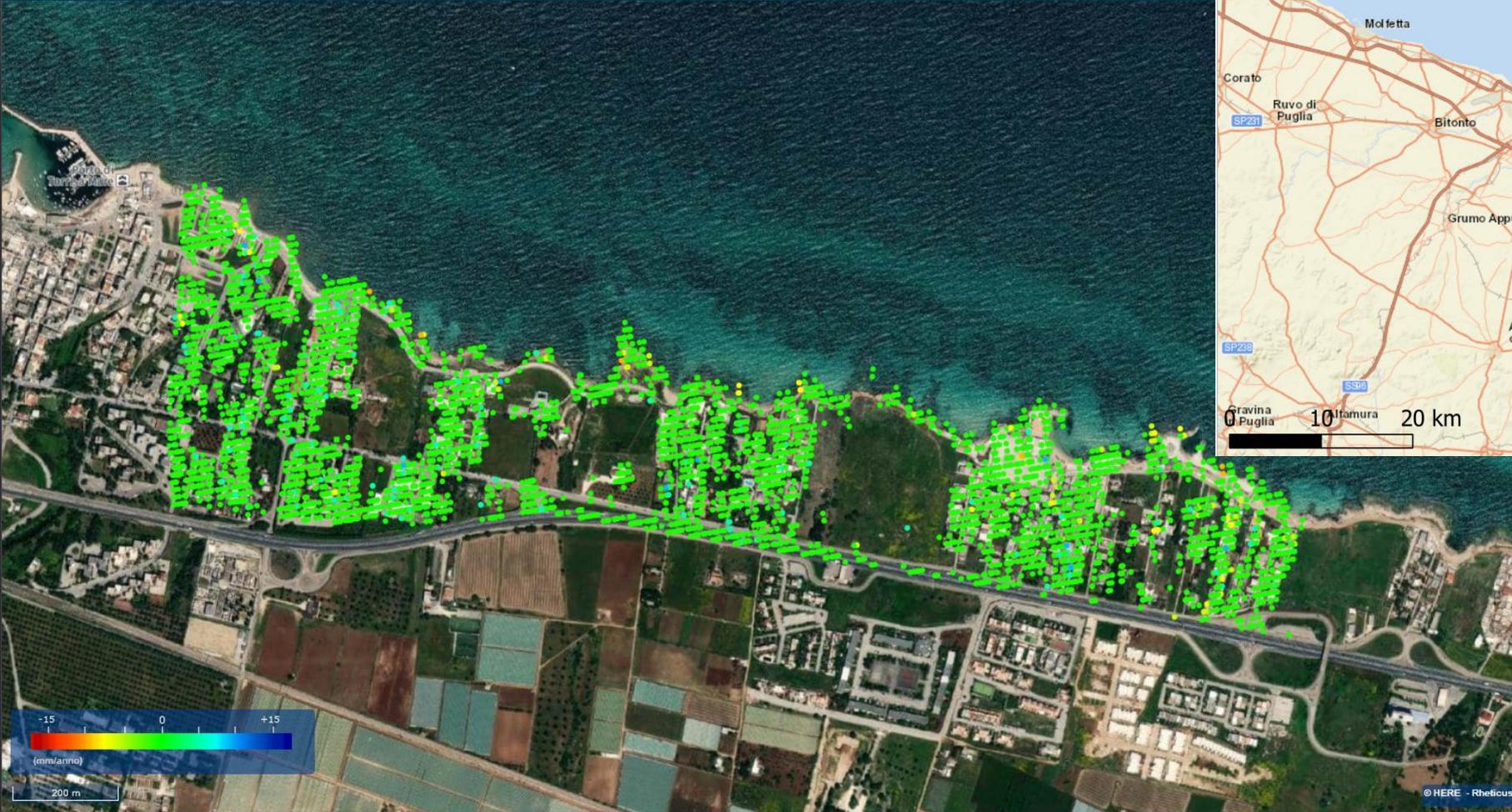
Multi-Temporal InSAR allows monitoring millimetric displacements of stable areas of the Earth surface over time

Rheticus[®] Displacements map

Rheticus[®]

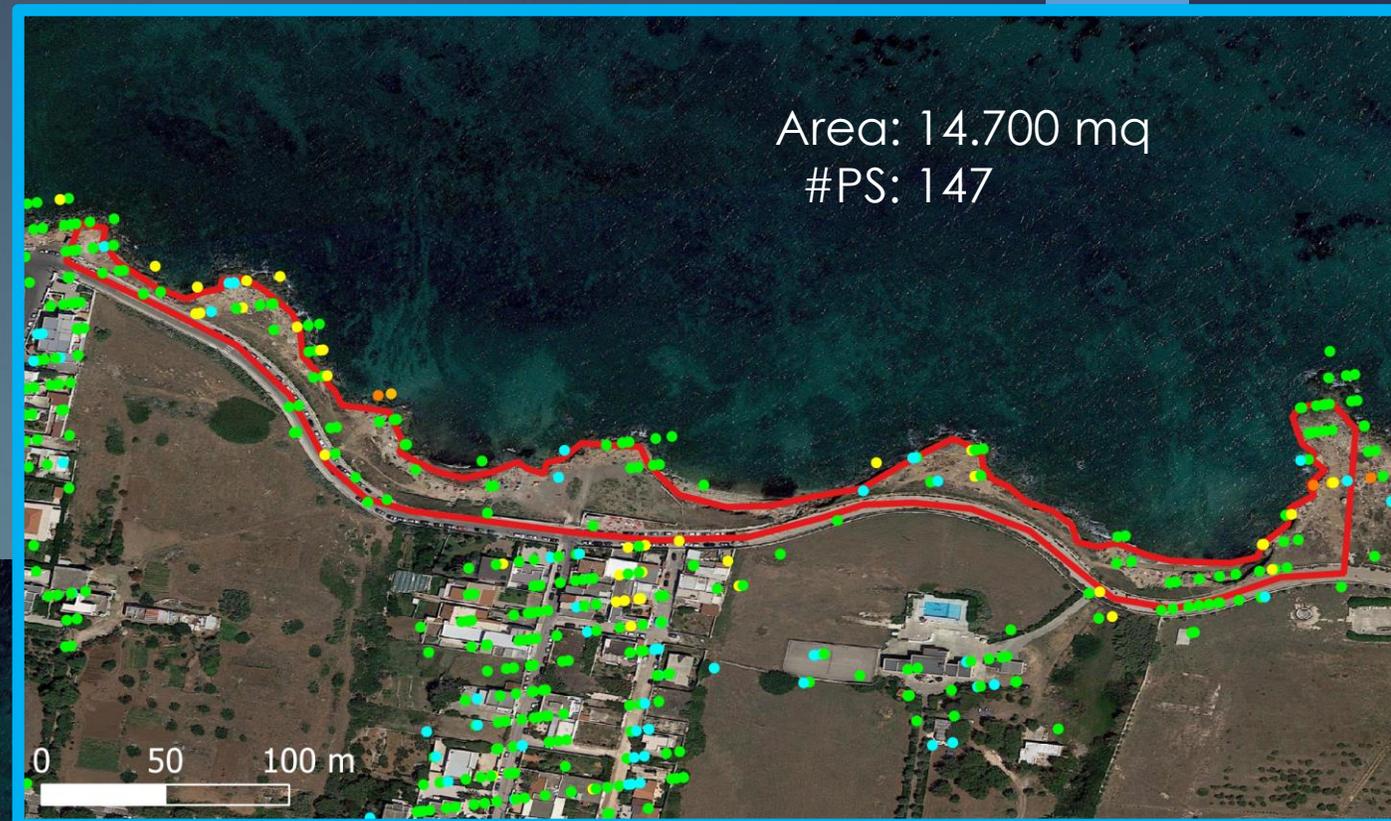
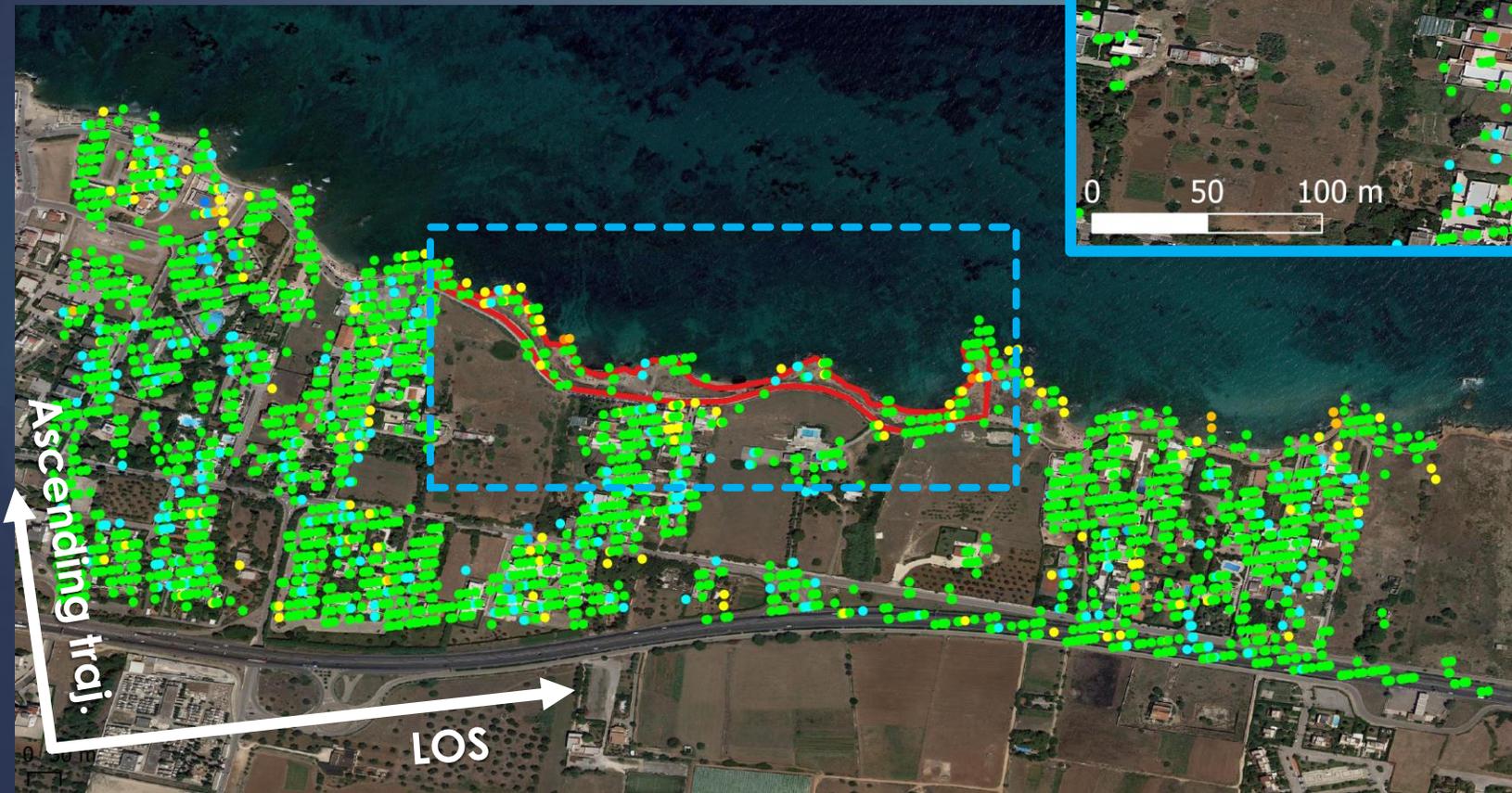
Displacement

cnr_sapere (CNR)

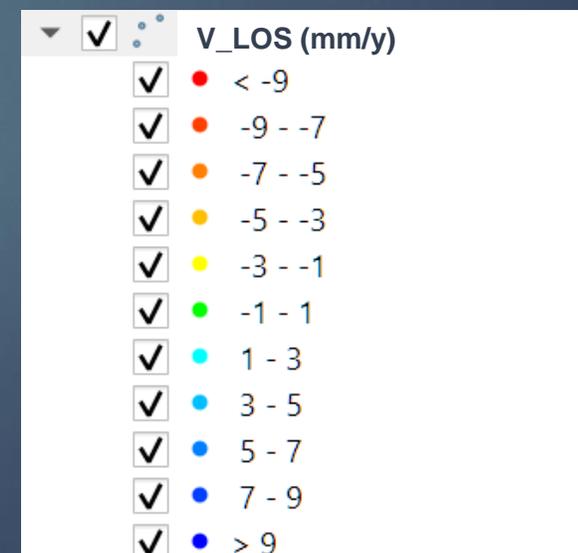


Analisi GIS

Area tot: 0.66 kmq
#PS: 2847



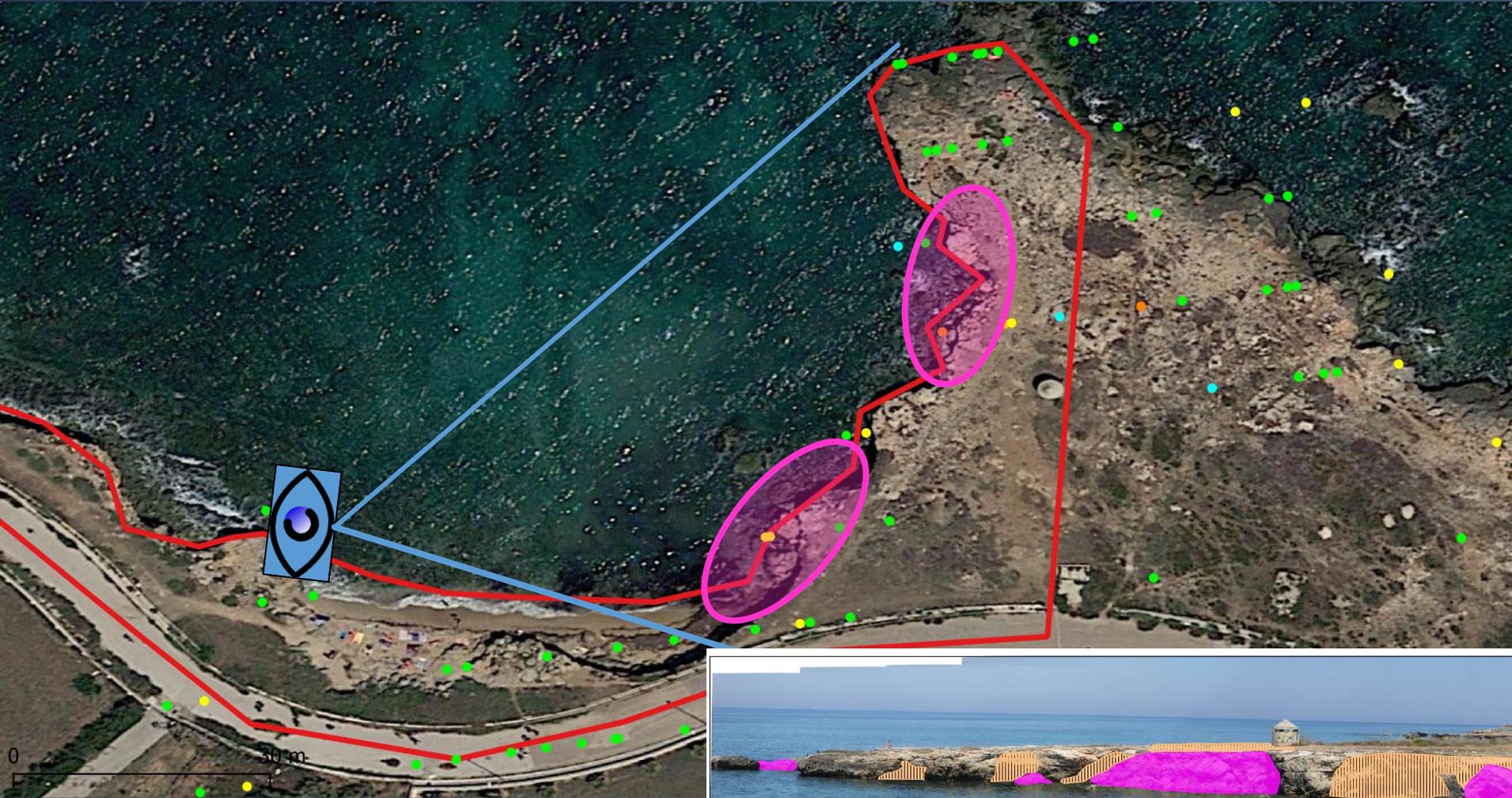
Area: 14.700 mq
#PS: 147



Area "progetto"



Area "progetto"

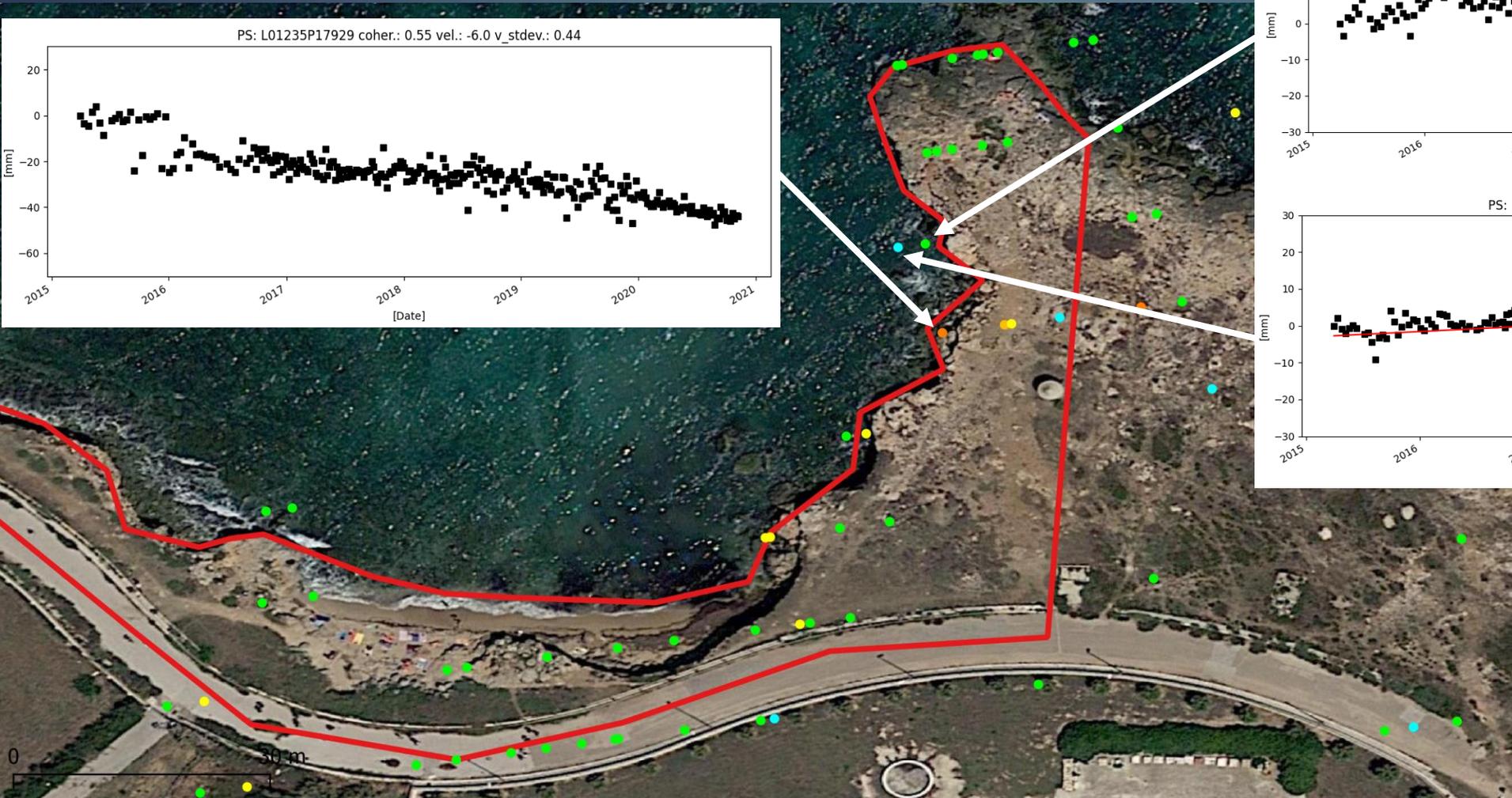
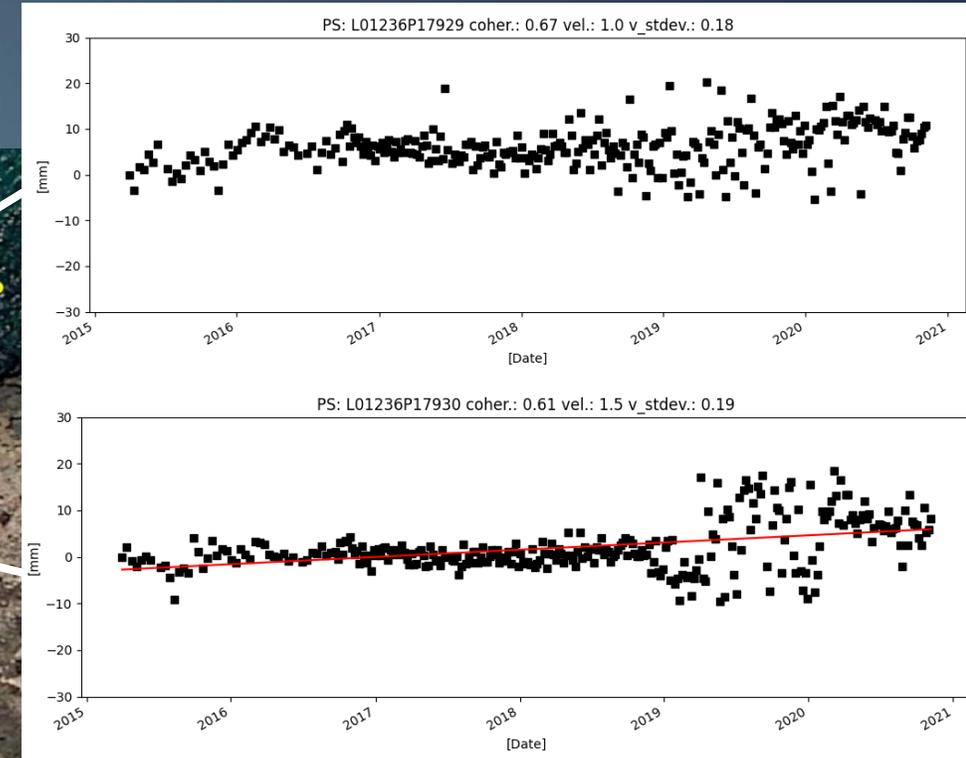
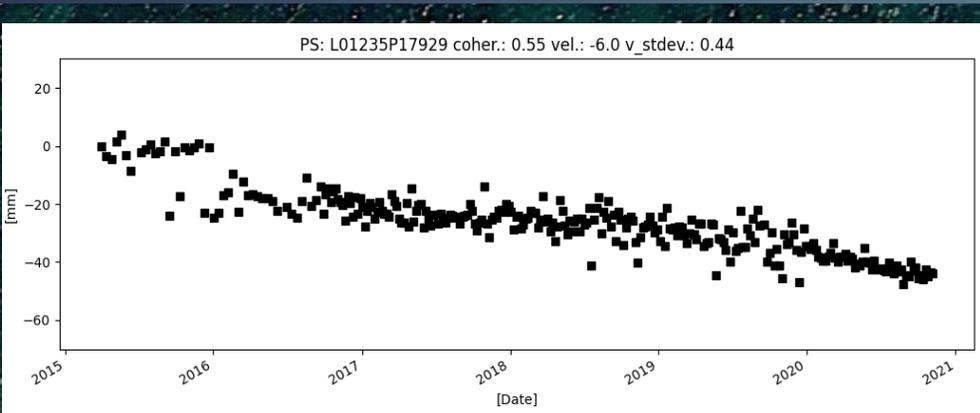


— GROTTE O BORDI AGGETTANTI
— PRODOTTI DA INSTABILITA' PREGRESSE

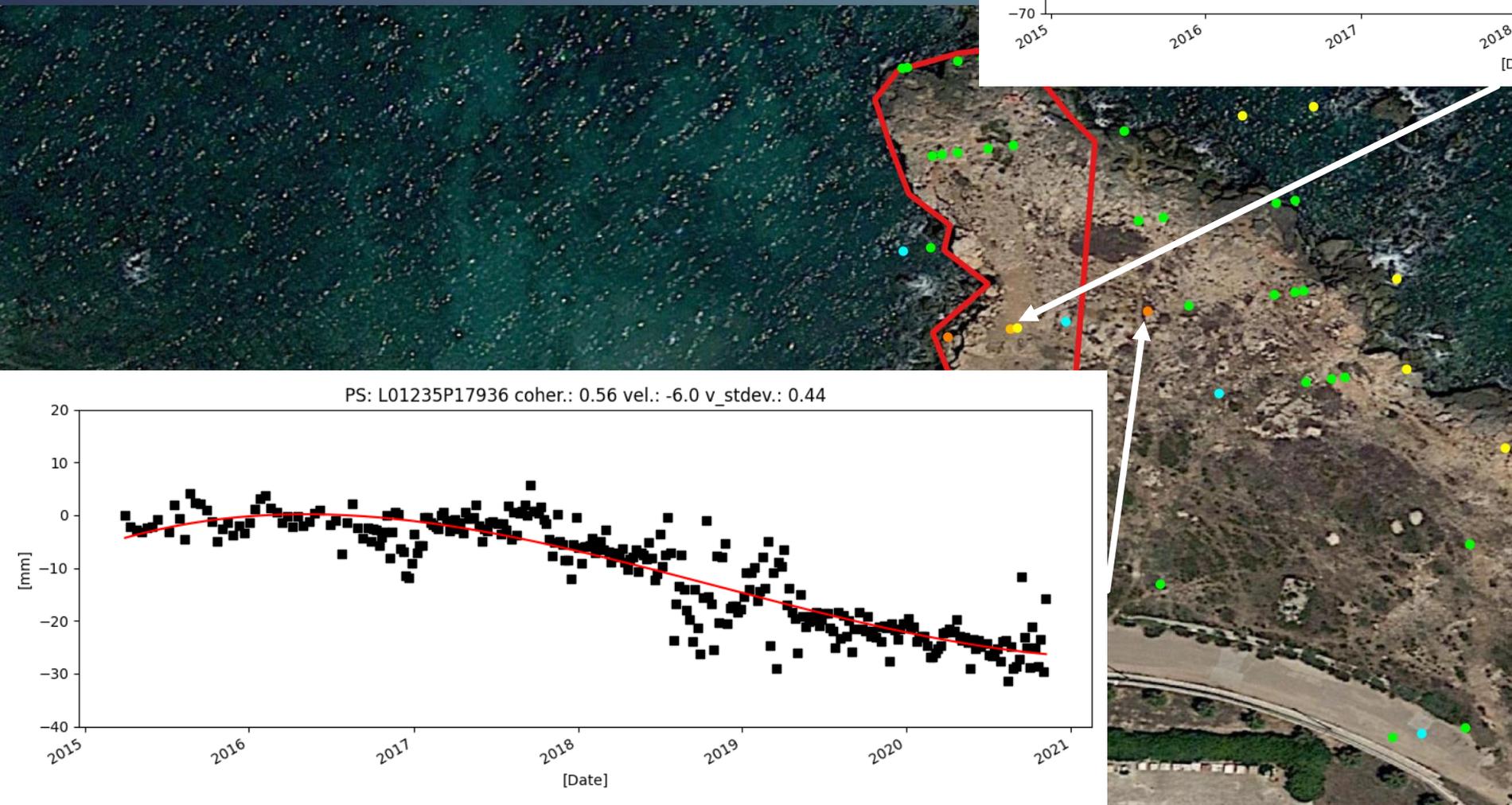
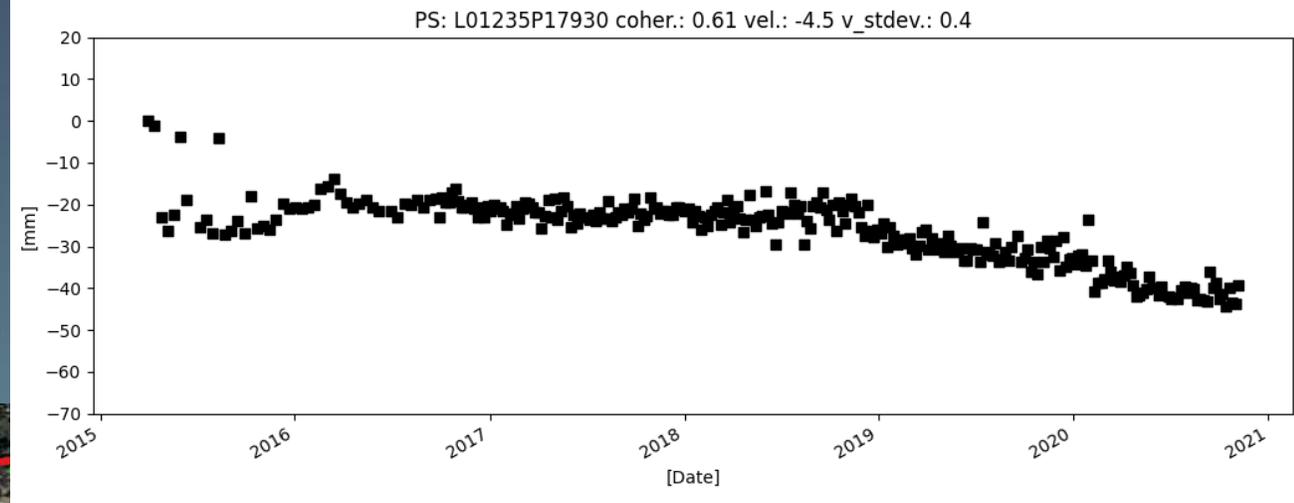
Analisi PS time series in Rheticus



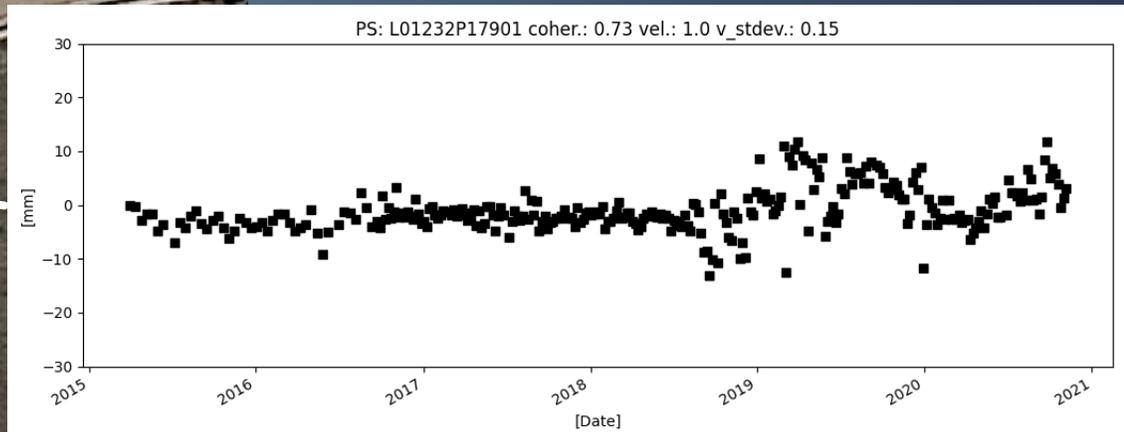
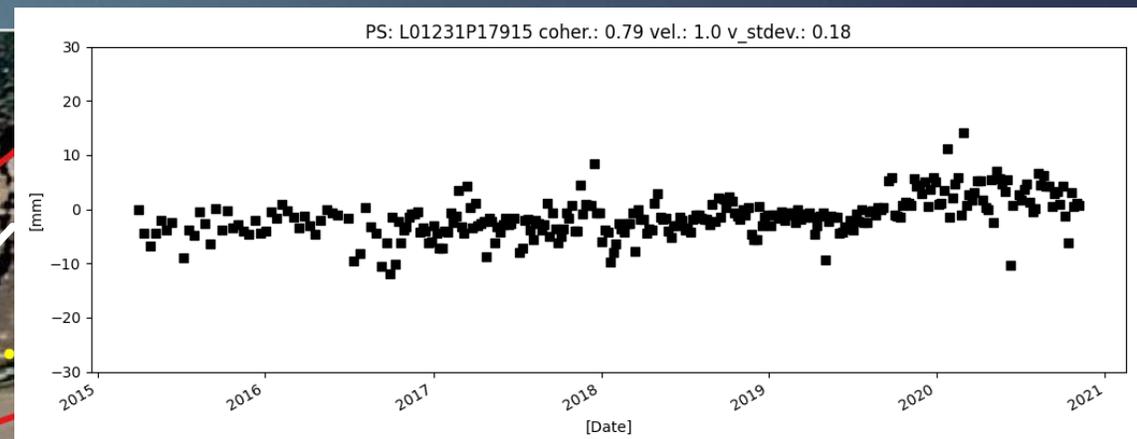
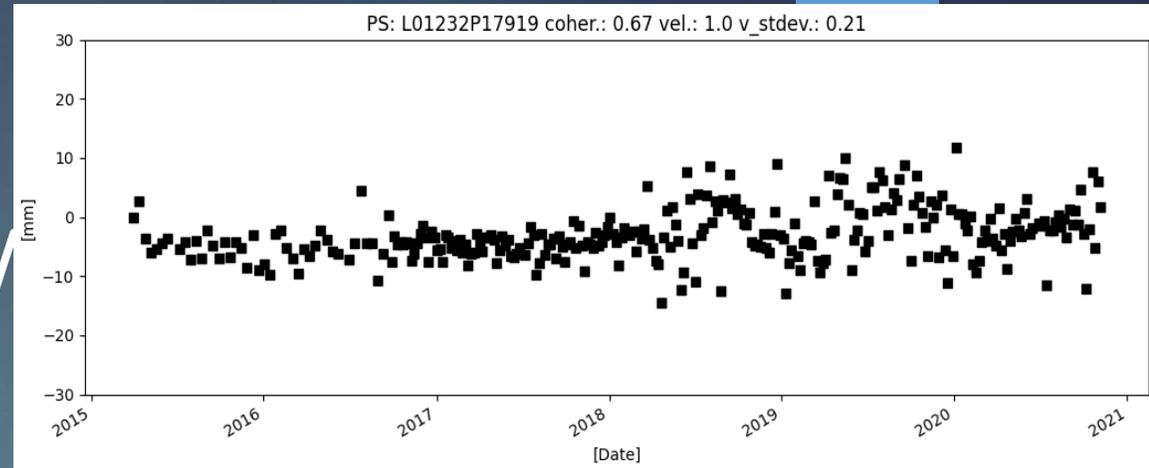
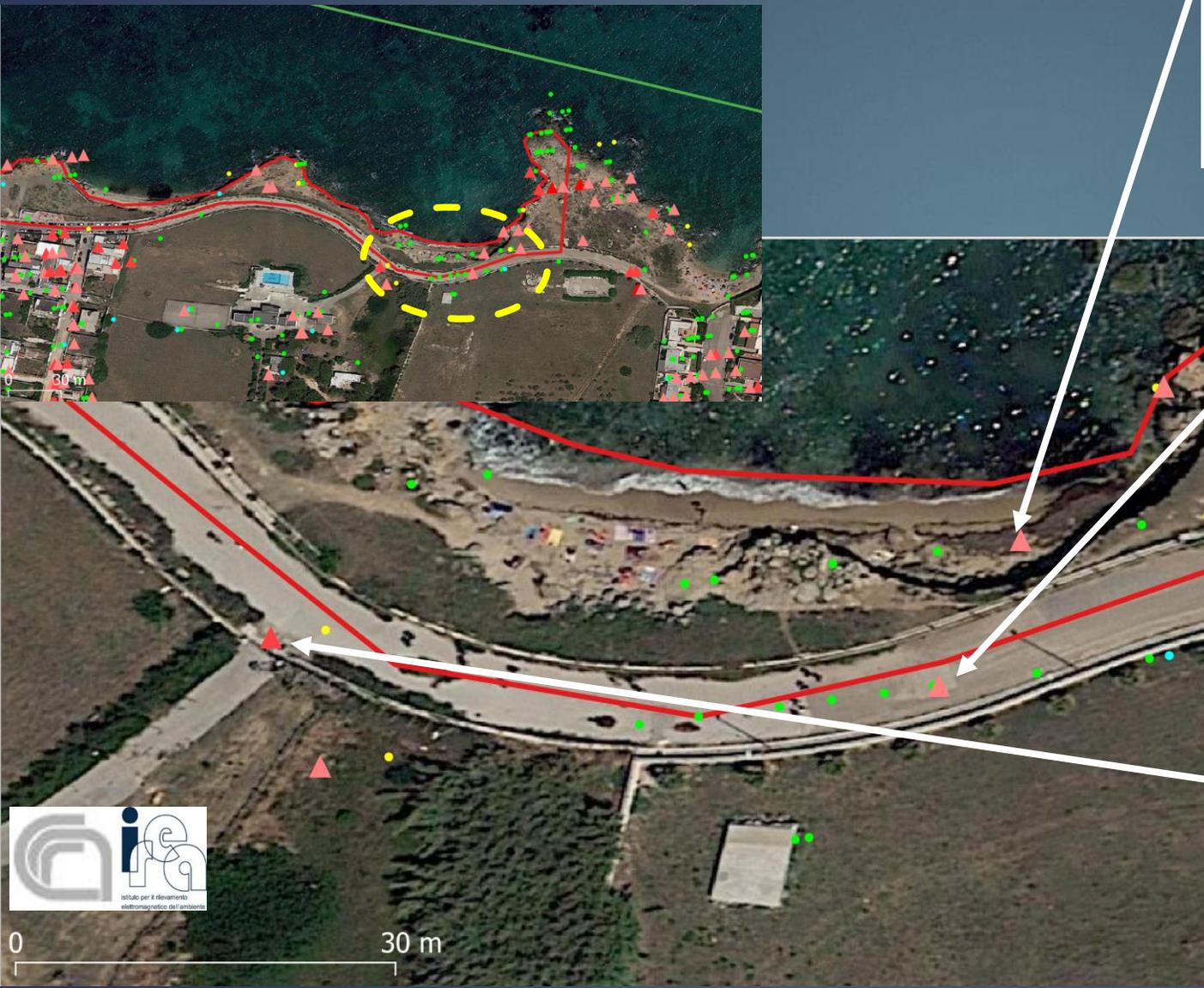
Time series



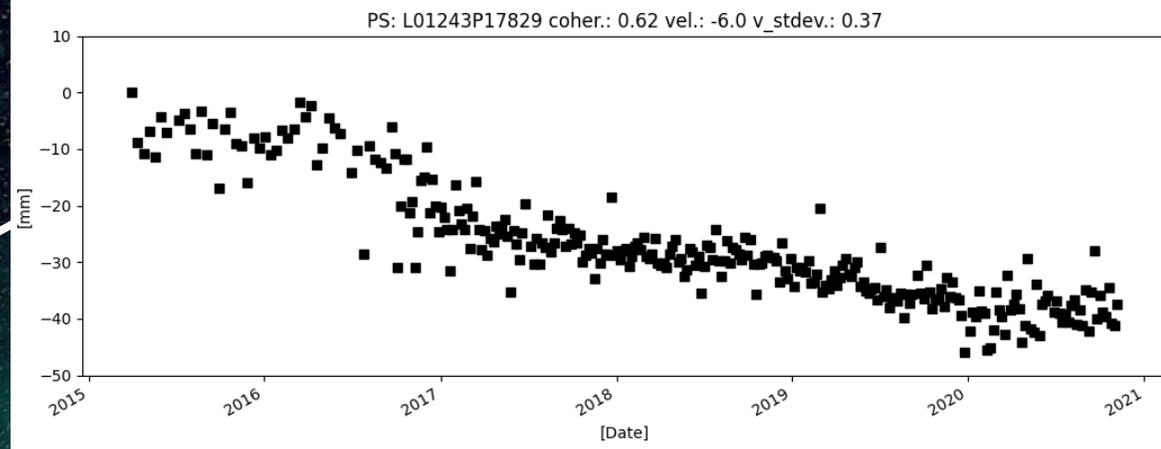
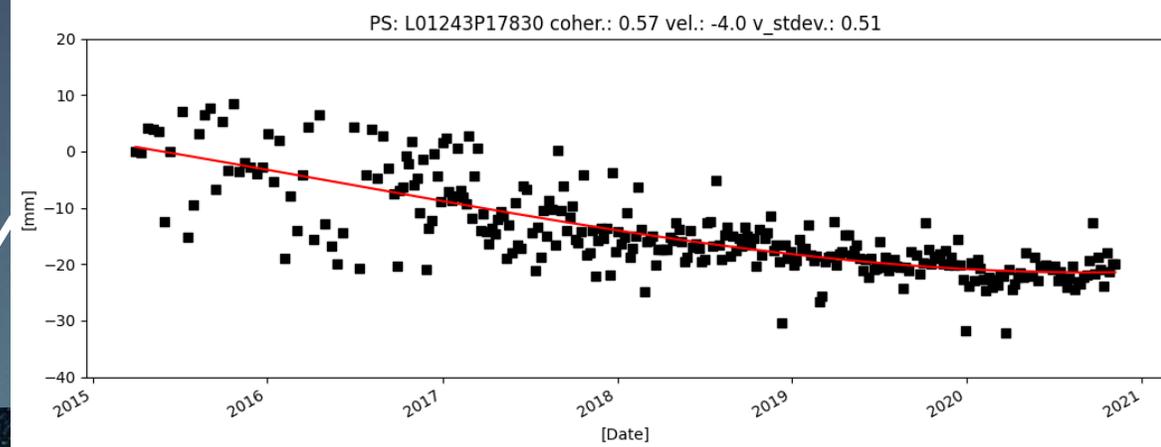
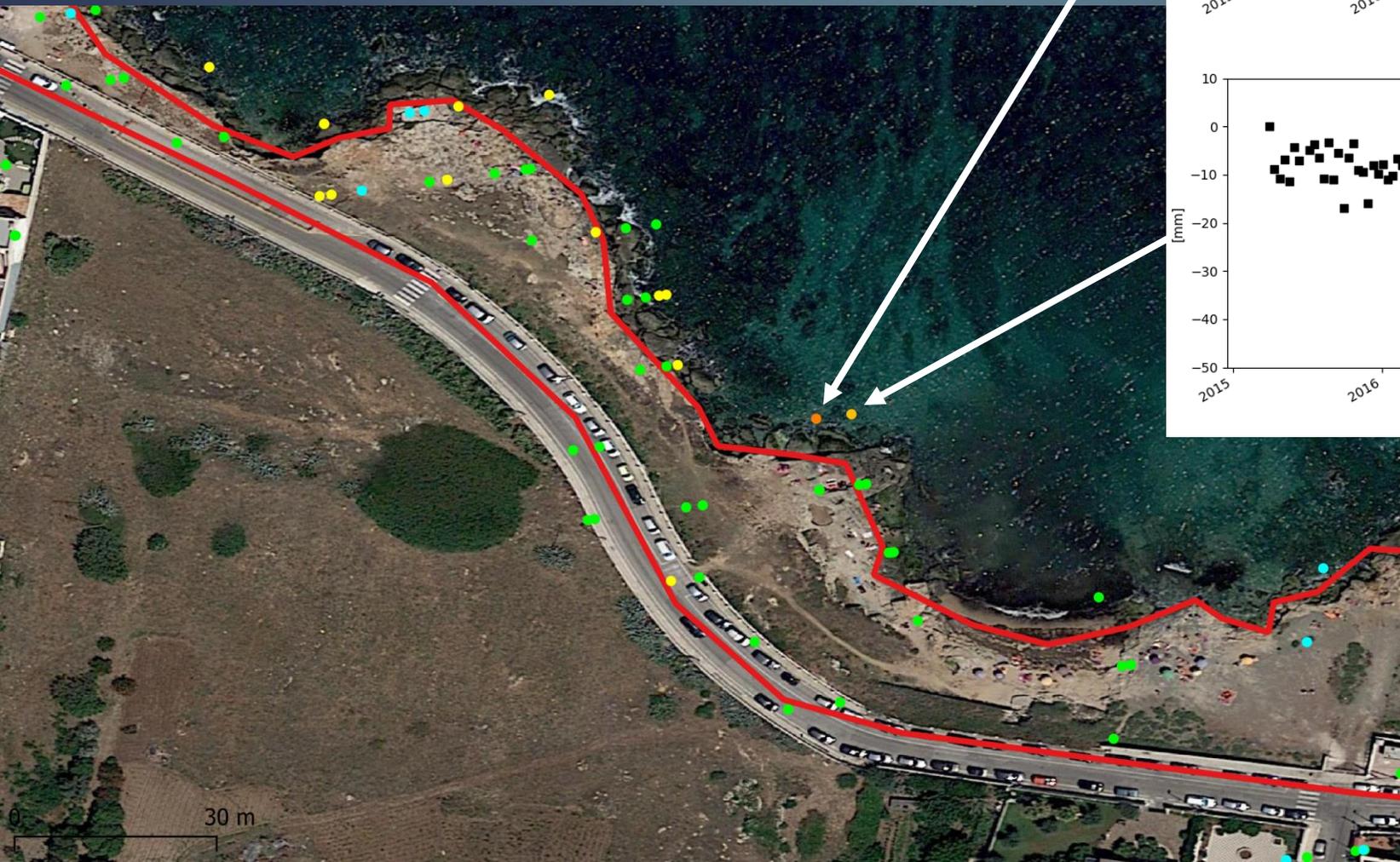
Time series



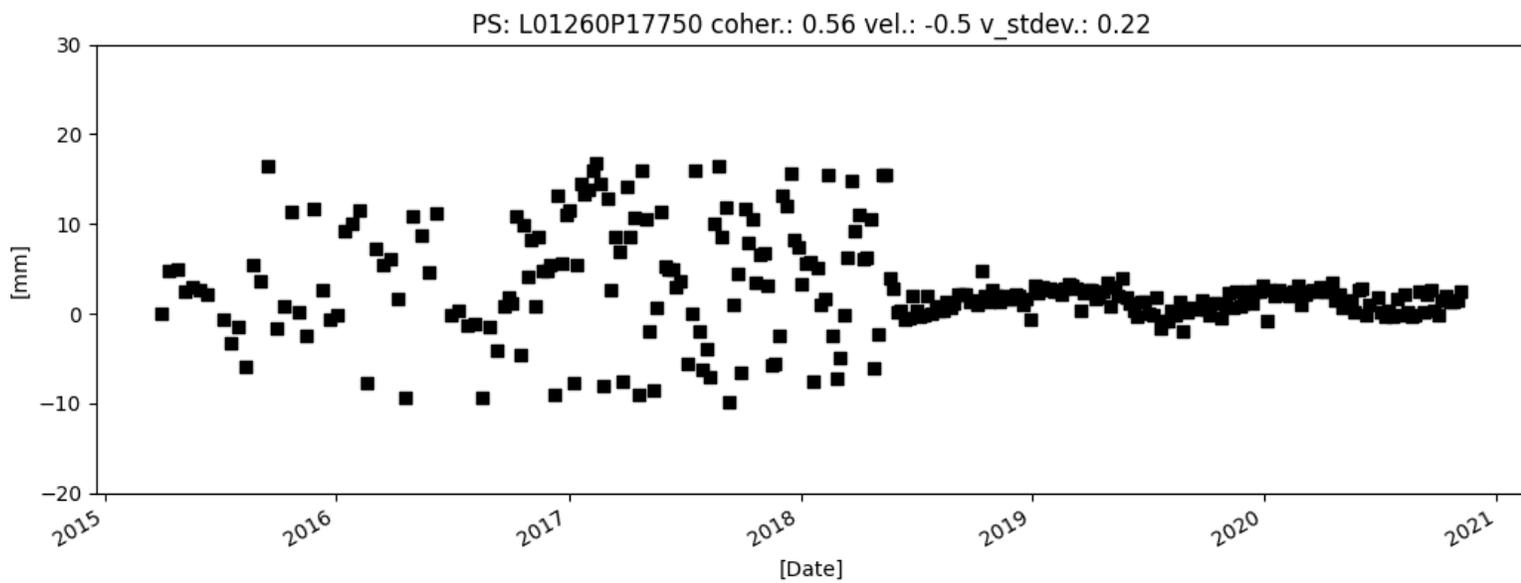
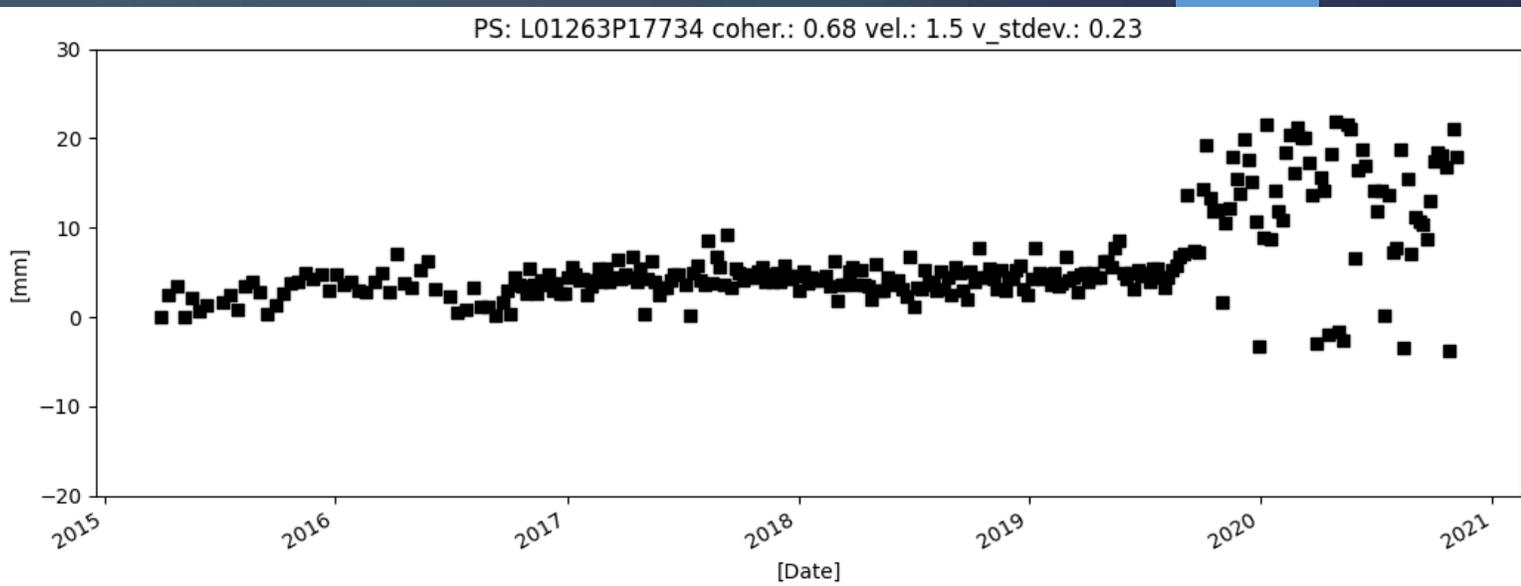
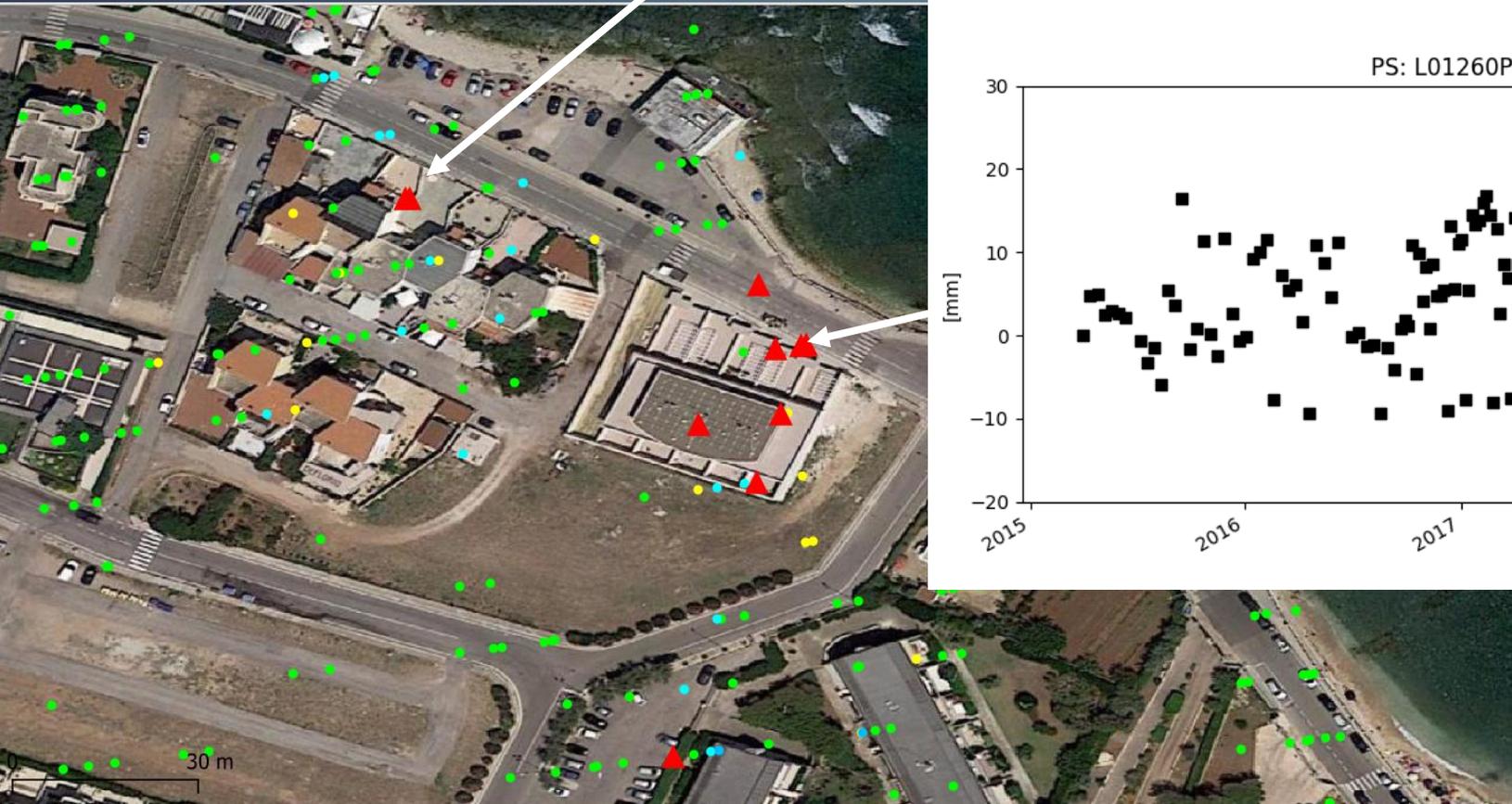
Time series



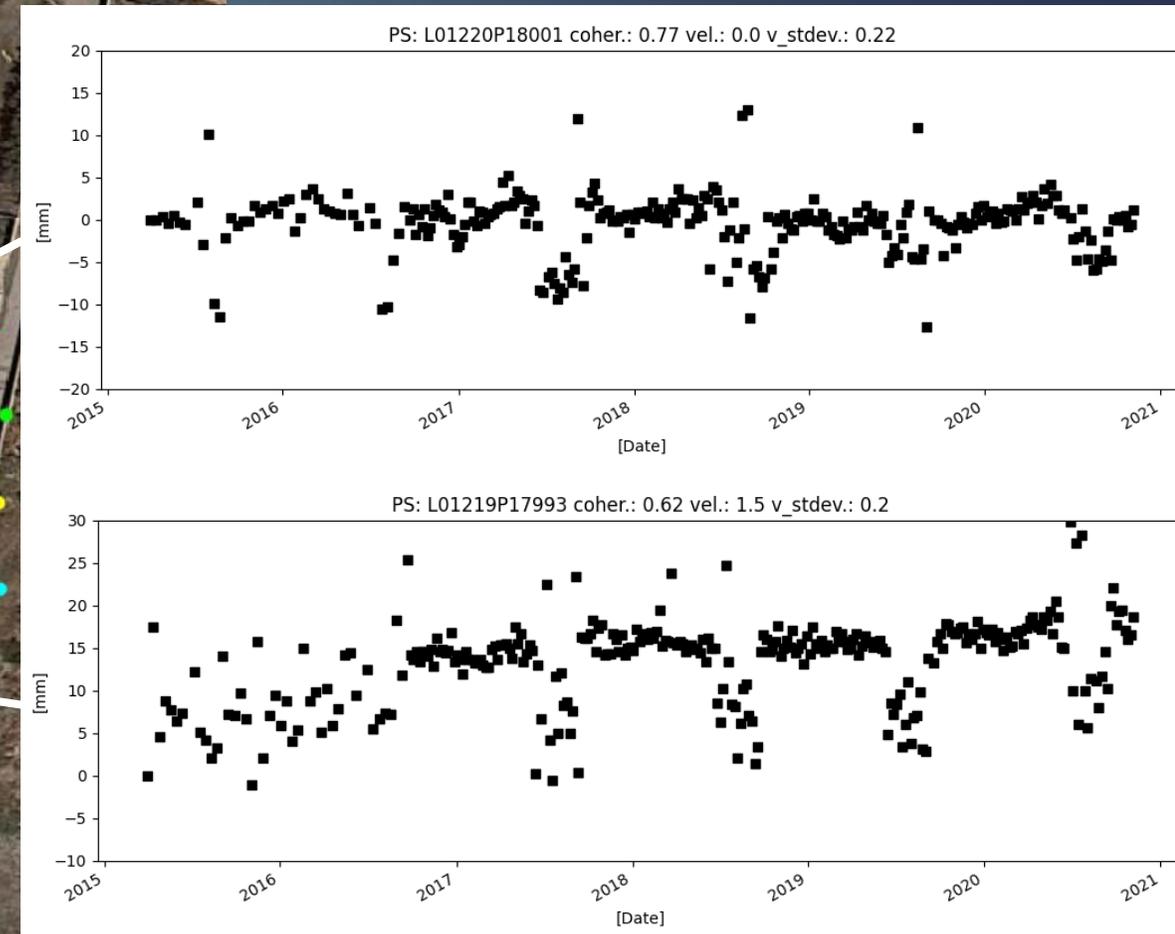
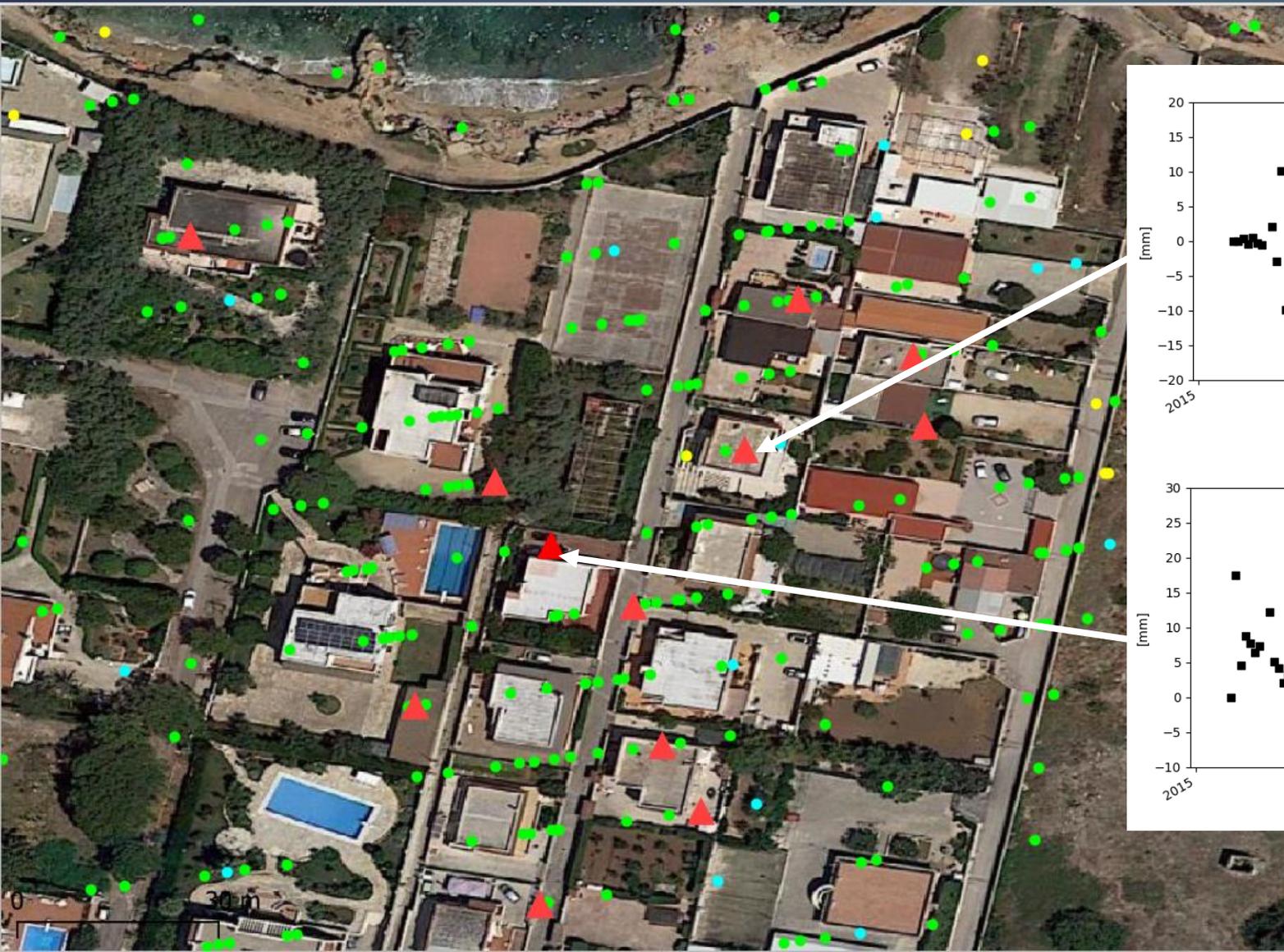
Time series



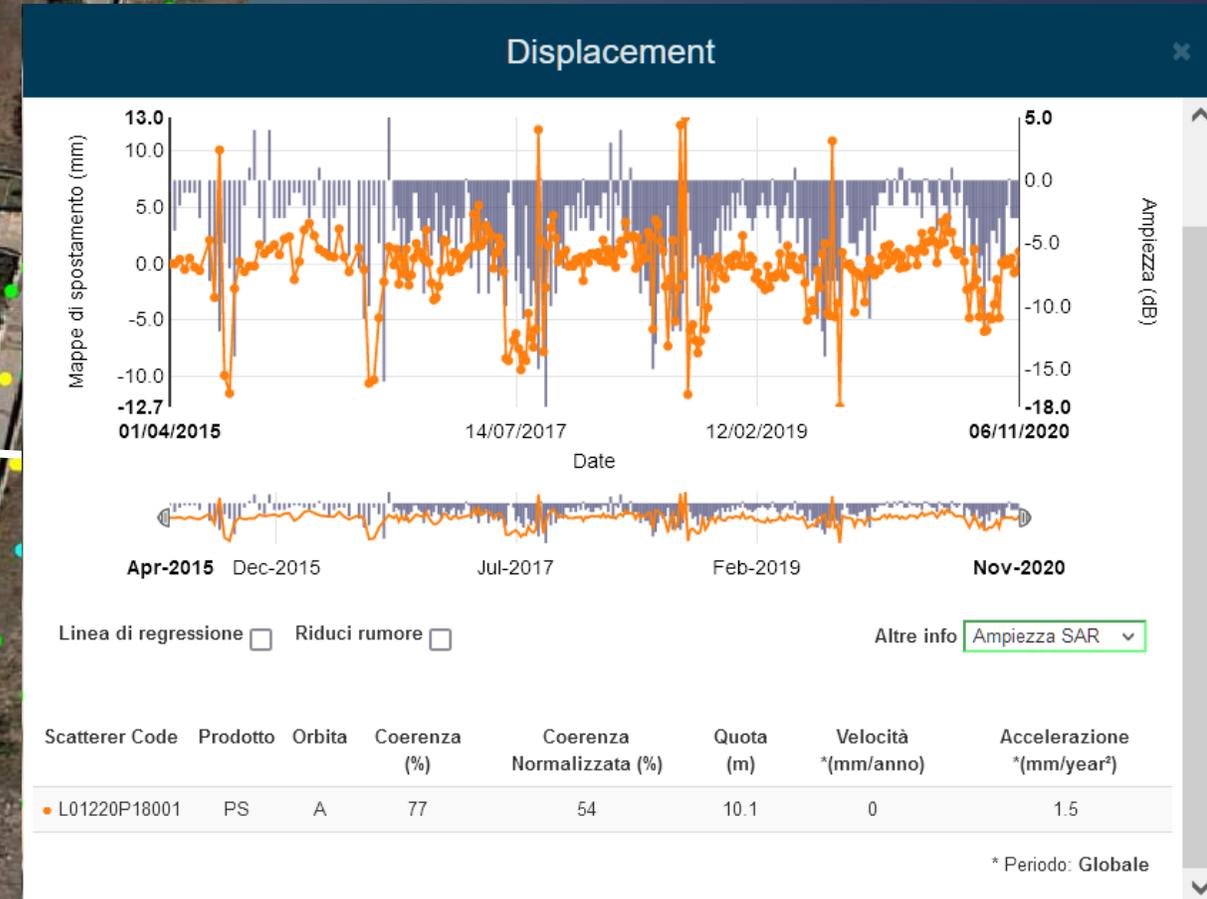
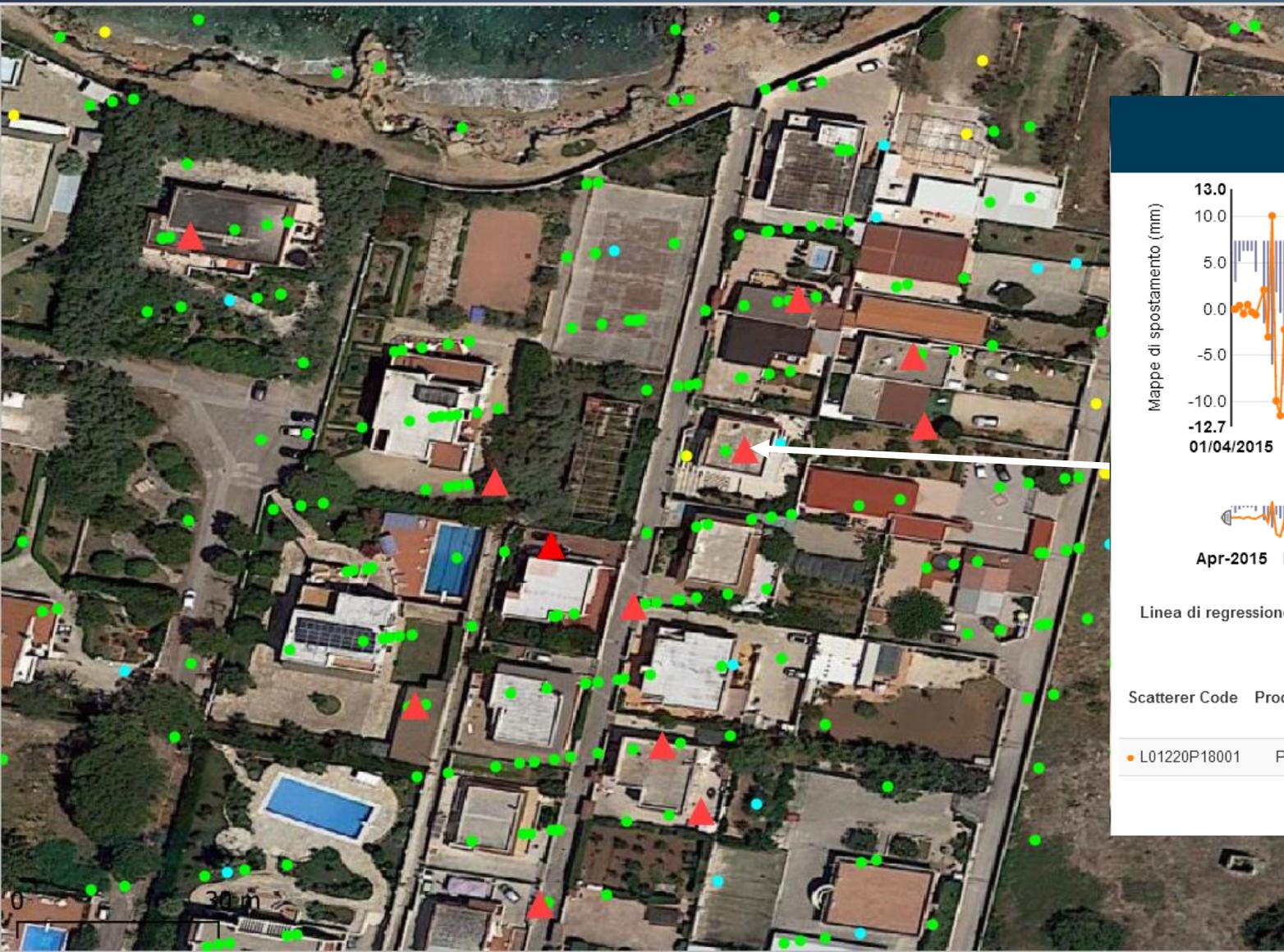
Time series (altri punti interessanti)



Time series (periodic)

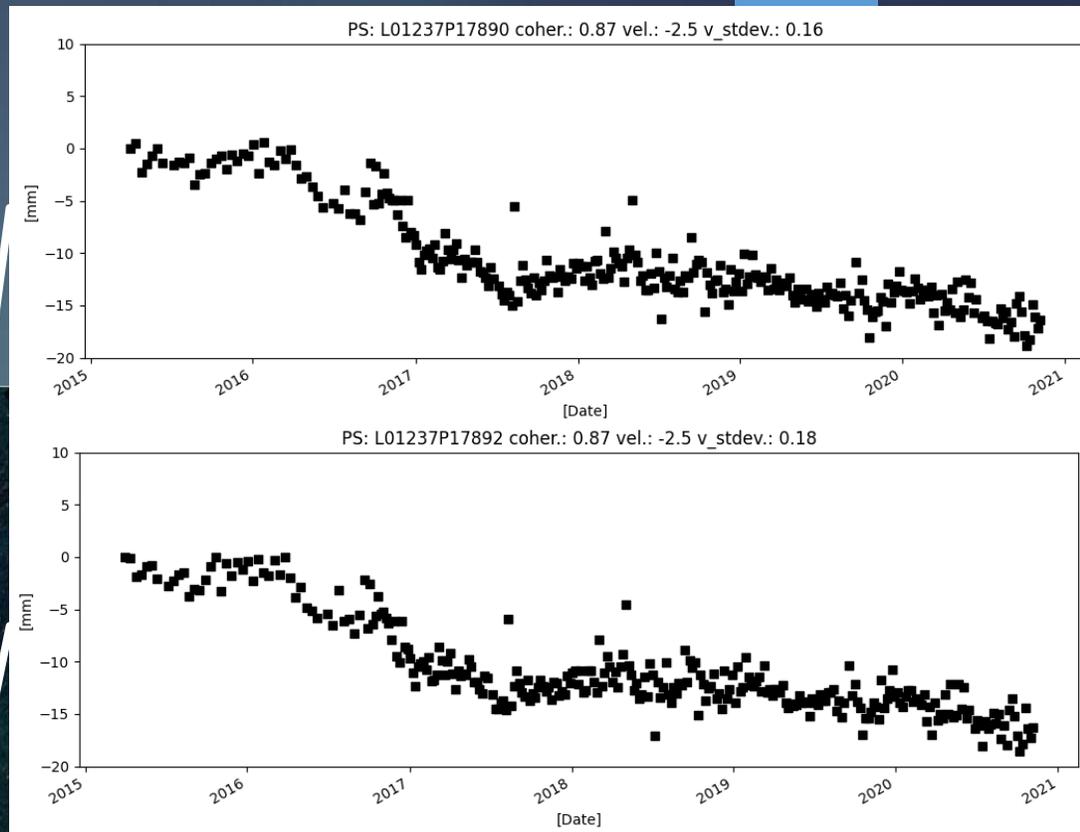


Time series (periodic) – amplitudes?

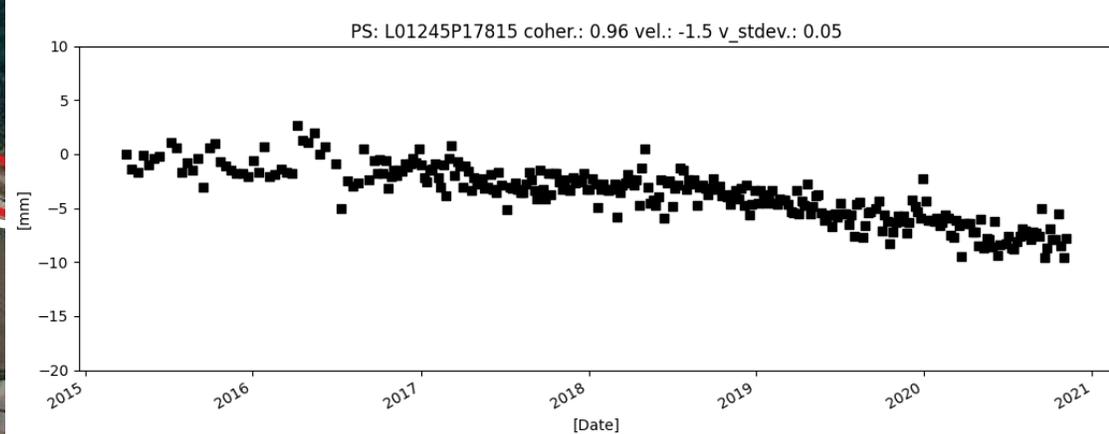
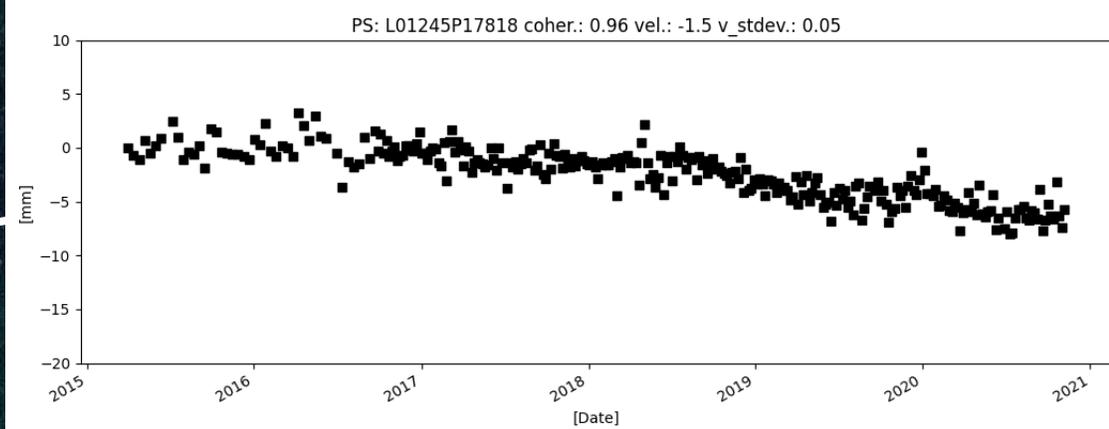
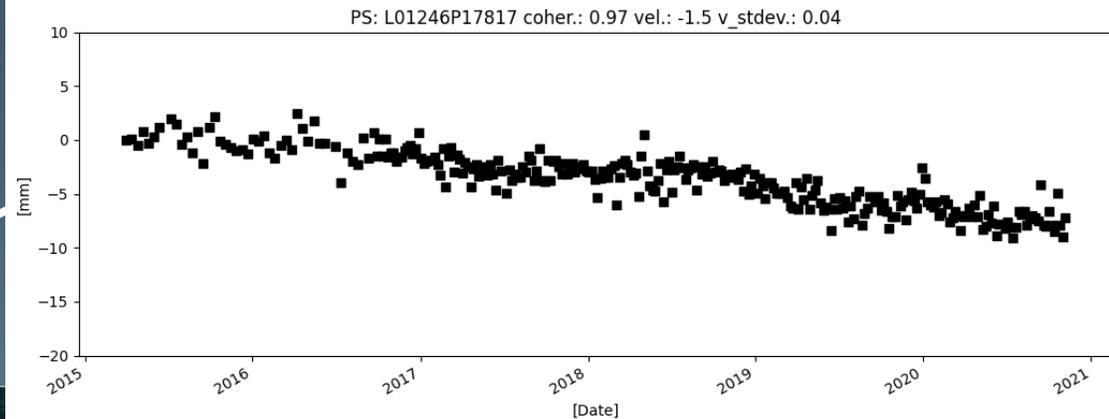
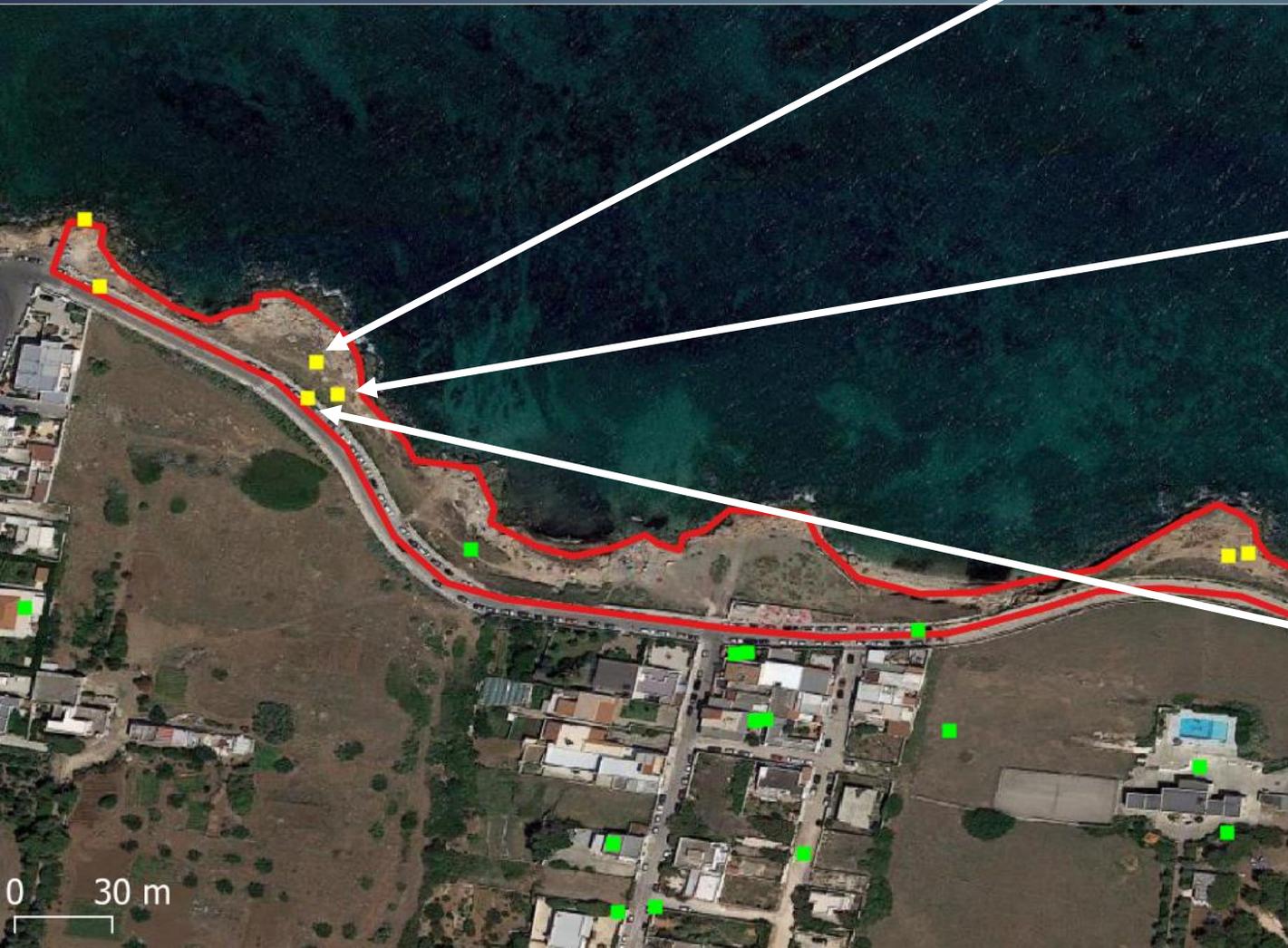


DS displacements

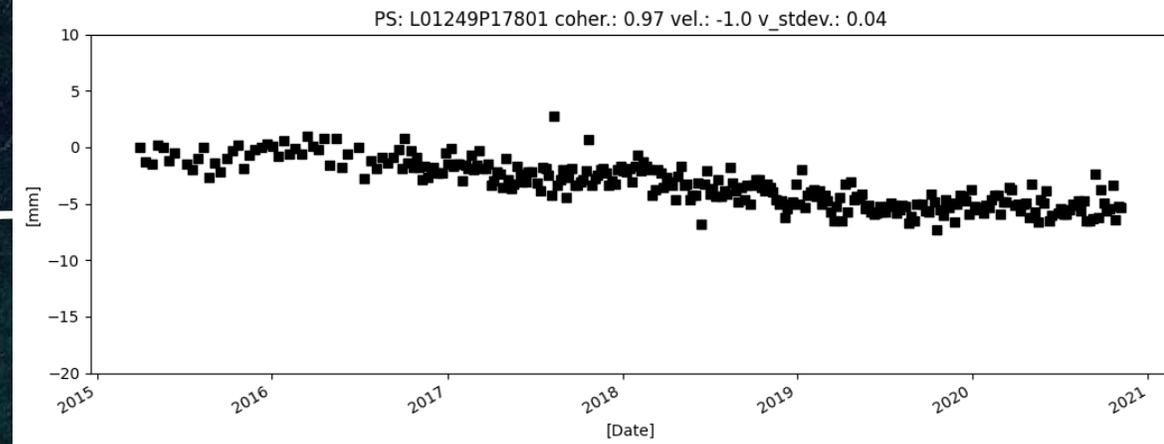
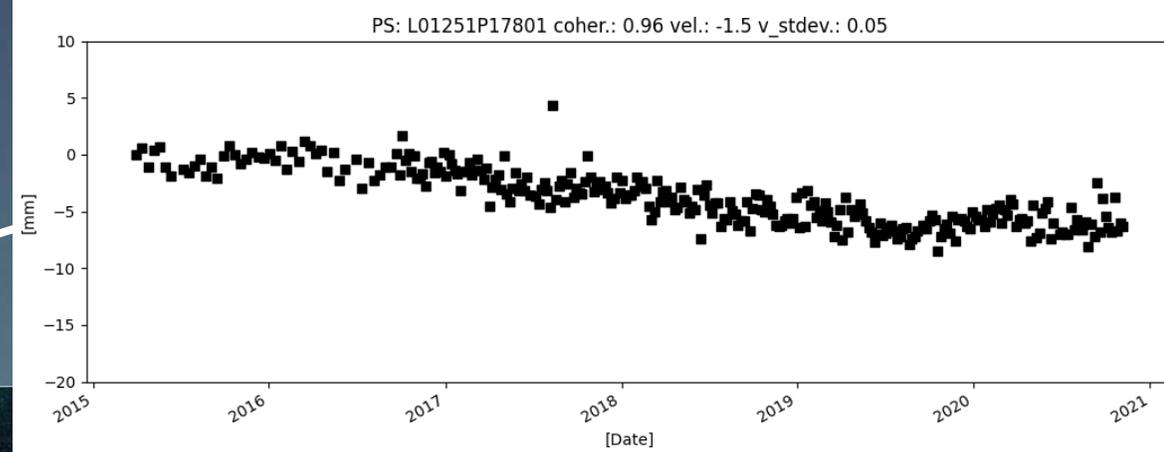
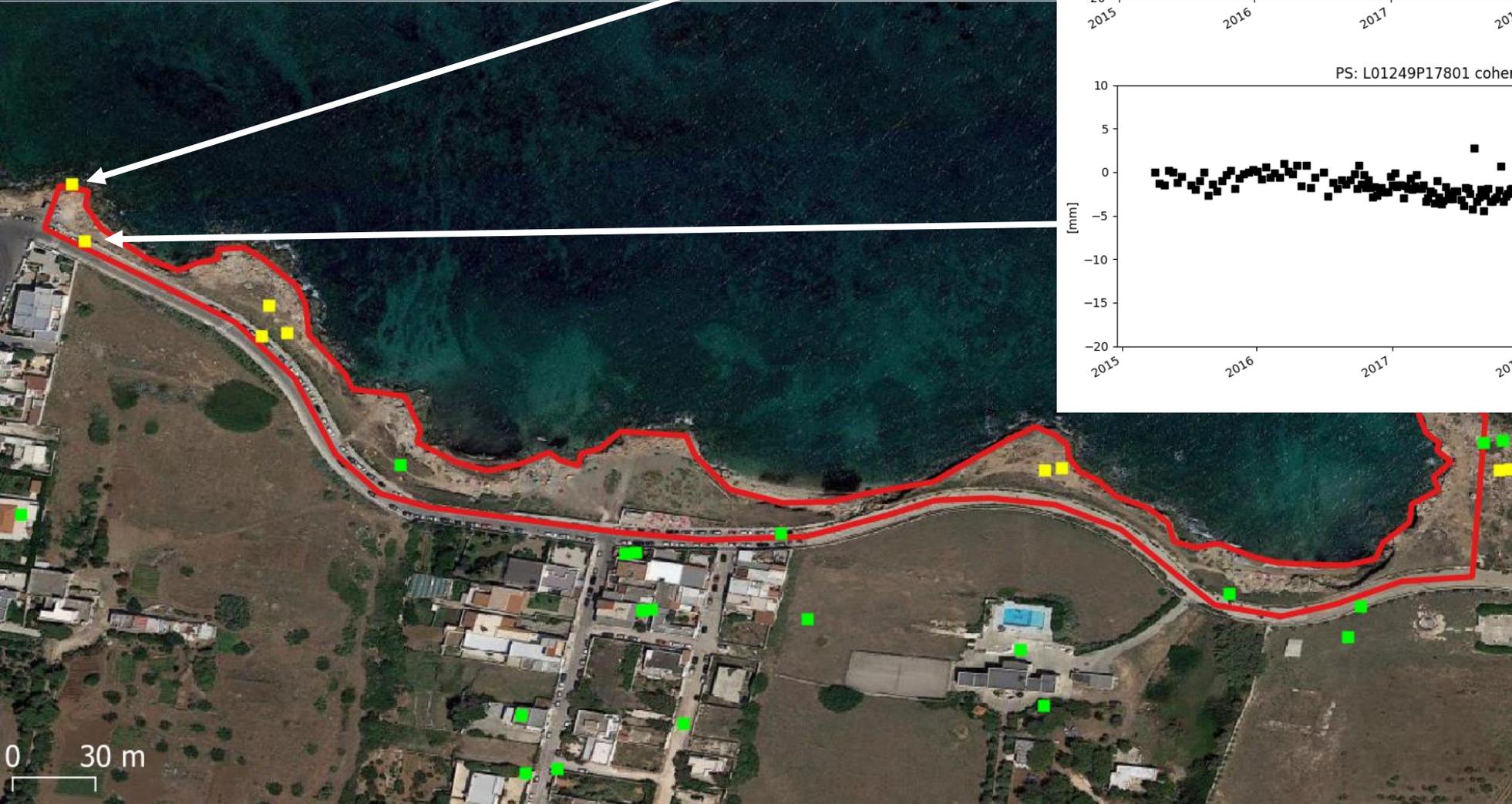
Area: 14.700 mq
#DS: 10



DS displacements



DS displacements



Conclusioni

- ▶ È stata effettuata una indagine preliminare circa la possibilità di monitorare fenomeni di deformazione costiera tramite dati telerilevati forniti attraverso il servizio Rheticus[®] di Planetek
- ▶ Area campione: sud di Torre a Mare (Bari); dati dal sensore ESA Sentinel-1
- ▶ Buona densità di PS/DS sull'area campione e più in generale su tutto il tratto di costa
- ▶ Rheticus[®] permette analisi puntuali "a campione"; su ogni singolo punto l'interfaccia permette analisi flessibili su intervalli temporali variabili e dati ancillari (Ampiezze SAR, precipitazioni)
- ▶ Alcuni target mostrano deboli segnali di deformazione, specie in tempi recenti
- ▶ Altri target (non nell'area di "progetto") mostrano caratteristiche interessanti, ad es. andamenti periodici, "nascita" e "morte" di target stabili...
- ▶ L'attività preliminare evidenzia quindi fenomeni degni di nota, eventualmente da indagare meglio tramite analisi successive