

Stime e verifiche dell'impatto delle polveri desertiche sui valori di particolato in Italia attraverso l'integrazione di dati modellistici CAMS con misure della rete nazionale di monitoraggio della qualità dell'aria: risultati preliminari dal progetto CAMS-NCP e rilevanza nella nuova Direttiva Europea 2881/2024



Atmosphere Monitoring

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PROGRAMME OF
THE EUROPEAN UNION



NATIONAL COLLABORATION PROGRAMME
ITALIAN INITIATIVE



PROGRAMME OF THE
EUROPEAN UNION



IMPLEMENTED BY



Enhancing National Air Quality with CAMS National Collaboration Programme

The programme boosts the integration of CAMS products into national decision-making processes. Aims to address gaps in cross-border actions, support capacity-building and public outreach, while gathering valuable feedback from its community to shape the future of the service.

1. Enhance the Uptake of CAMS products

NCP supports CAMS products integration into national decision-making.

A-LA-CART MENU...
IT'S UP TO YOU!



AIR QUALITY MODELLING
AND ASSESSMENT



ANTHOPOGENIC AND NATURAL
EMISSION ESTIMATES



POLLEN FORECASTING



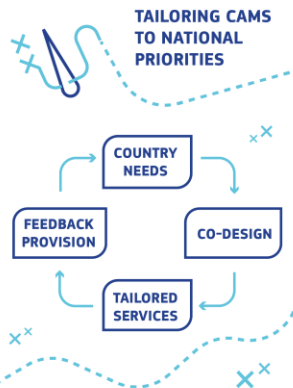
WILDFIRE SMOKE TRACKING



HEALTH AND ENERGY
ORIENTED APPLICATIONS

2. Alignment with National Needs

CAMS offers a flexible suite of services that countries can adapt to their national challenges



3. National Outreach and Communication

Clear and tailored communication transforms CAMS insights into tangible actions



AIR QUALITY
SHOULD SPEAK
EVERYONE'S
LANGUAGE!

NATIONAL STAKEHOLDERS



LOCAL AND REGIONAL
AUTHORITIES



ENVIRONMENTAL AGENCIES



PRIVATE SECTOR



ACADEMIA AND RESEARCH



MEDIA & CITIZENS

4. Atmosphere User Forum

"Community of experts"
facilitating knowledge exchange
and discussion

SHARE, LEARN,
AND GROW
WITH THE CAMS
COMMUNITY



GOALS



SHARE EXPERIENCES



CONNECT NATIONAL USERS
& CAMS EXPERTS



LEARN BEST PRACTICES TO
ADDRESS CHALLENGES



PROVIDE FEEDBACK TO GUIDE
CAMS DEVELOPMENT



STAY UPDATED ON CAMS
SERVICES & OPPORTUNITIES

NCP as a bridge between CAMS and National Users



WP20

Direct Use



WP30

Downscaling



WP60

**Communication
and Outreach**



WP70

Training



WP80

**Pollen
Demonstrator**

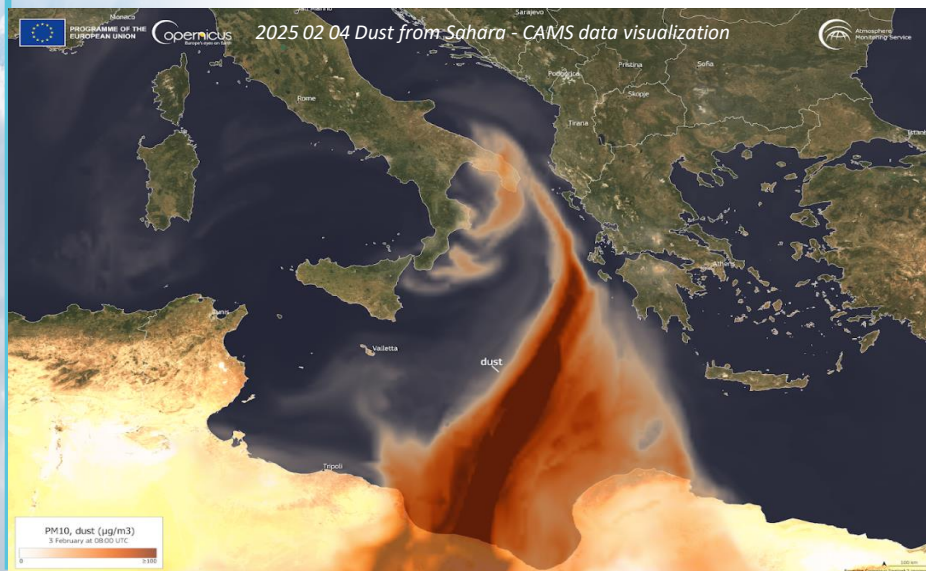




Contesto (2/3)

Già dalla precedente **Direttiva Europea sulla QA (2008/50)** era previsto lo scorporo del contributo degli eventi naturali dal conteggio degli sforamenti ai valori limite fissati per il PM

Commission Staff Working Paper “establishing guidelines for demonstration and subtraction of exceedances attributable to natural sources under the Directive 2008/50/EC on ambient air quality and cleaner air for Europe”, SEC (2011) 208 final document, Brussels, 15/02/2011



**Questa possibilità resta confermata
nella Nuova Direttiva sulla QA*
che fissa limiti più stringenti**

New limit values for the protection of human health to be attained by **1 January 2030**

Pollutant	Averaging Period	Limit Value	Not to be exceeded more than	WHO guideline
PM _{2.5}	1 day	25 µg/m ³	18 times / year	
	Calendar year	10 µg/m ³	-	5 µg/m ³
PM ₁₀	1 day	45 µg/m ³	18 times / year	
	Calendar year	20 µg/m ³	-	15 µg/m ³

***Associata a Nuove Linee Guida**



PROGRAMME OF
THE EUROPEAN UNION



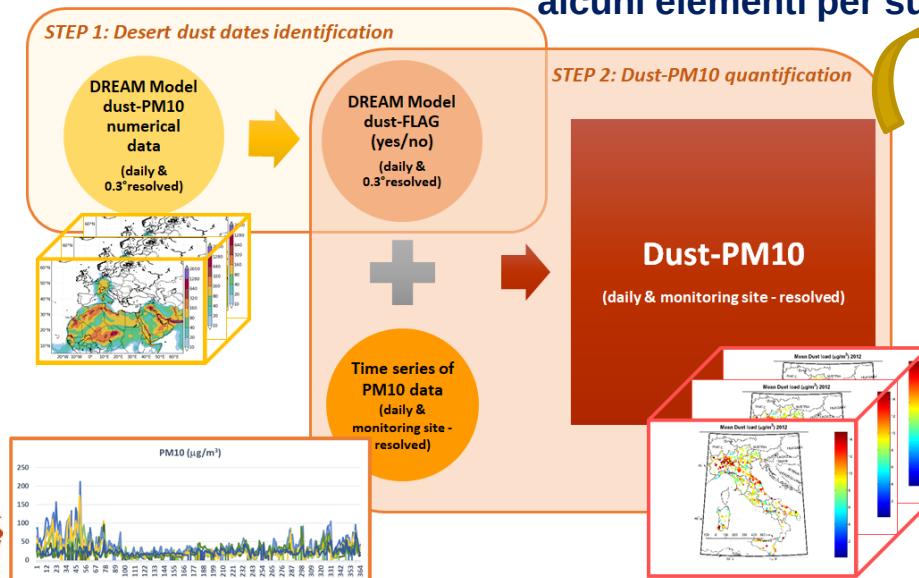
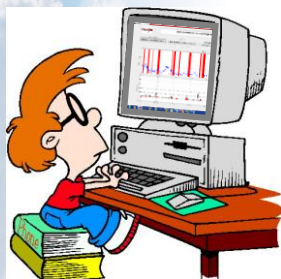
IMPLEMENTED BY





Nell'ambito di un progetto Europeo LIFE+ (DIAPASON), coordinato da CNR-ISAC abbiamo implementato e testato sull'Italia la Metodologia proposta dall'EC, e ne abbiamo modificato alcuni elementi per superare alcuni aspetti critici

Metodologia 'DIAPASON'



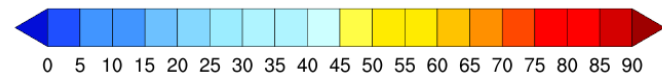
Nel 2024 questo metodo è stato adottato ufficialmente dal Ministero dell'Ambiente



per il relativo reporting alla EC con l'uso del modello NMMB-BSC



Cosa ricaviamo: esempi– Analisi singoli eventi



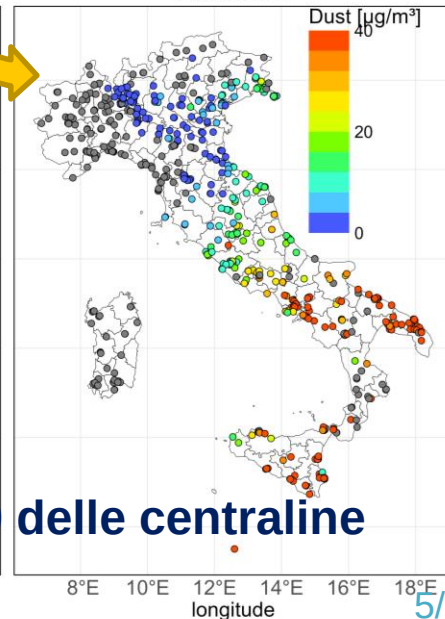
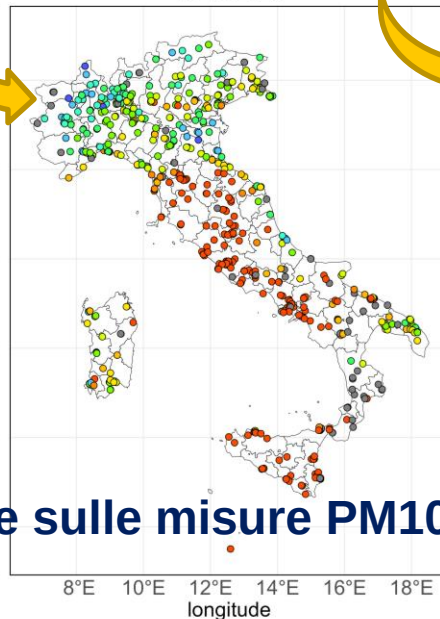
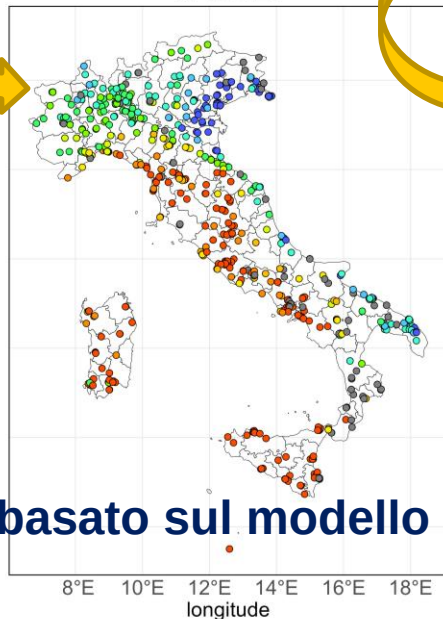
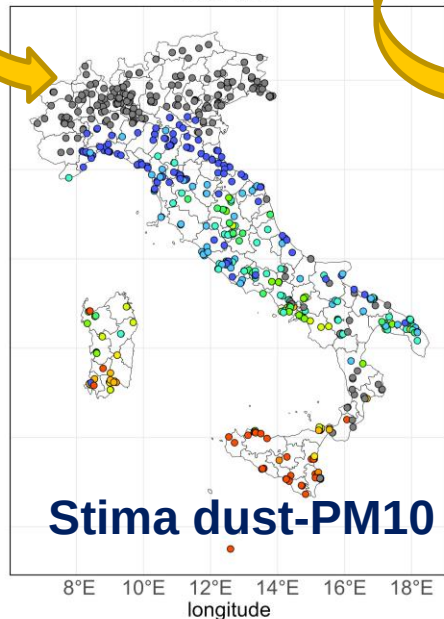
Cams Regional Reanalysis Dust PM10

26-06-2022

27-06-2022

28-06-2022

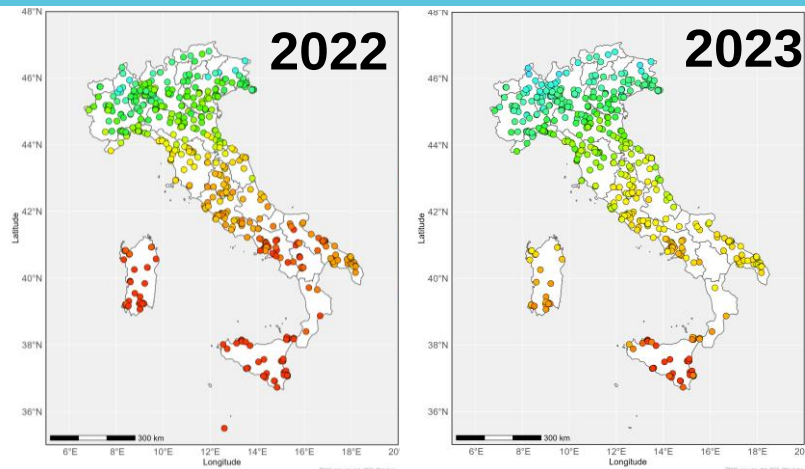
29-06-2022



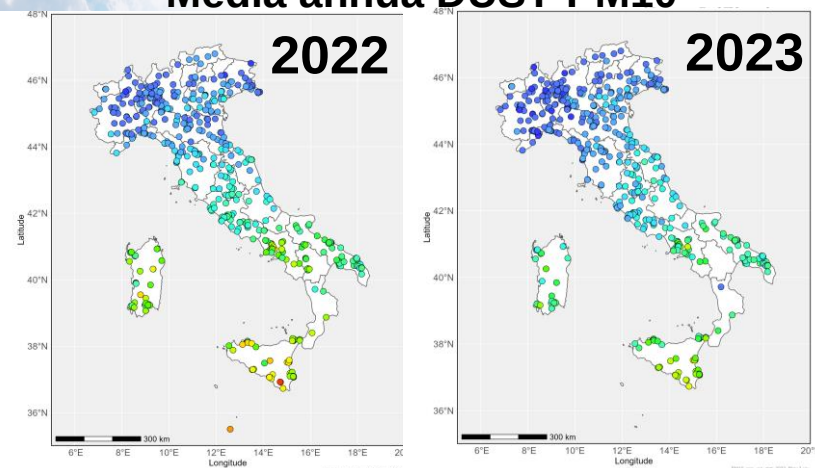
Stima dust-PM10 basato sul modello e sulle misure PM10 delle centraline



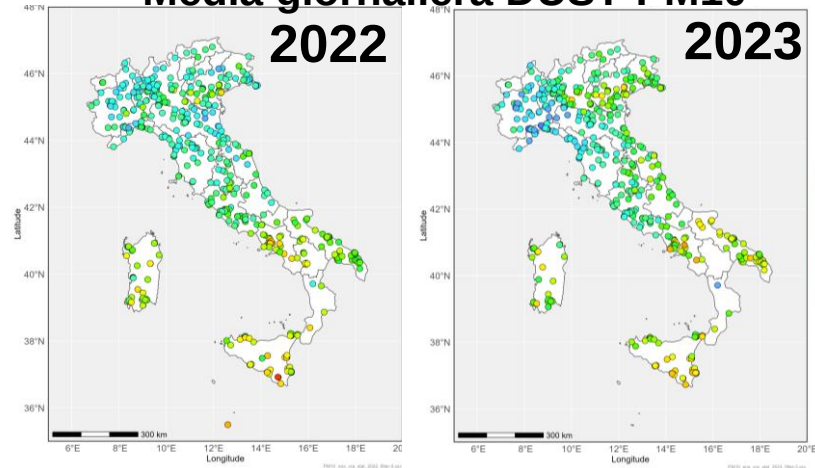
Numero giorni DUST

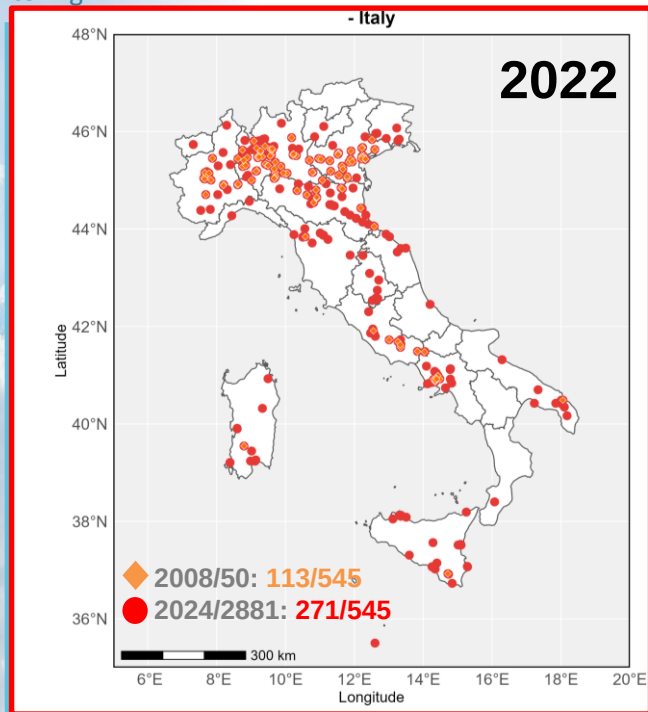


Media annua DUST-PM10



Media giornaliera DUST-PM10

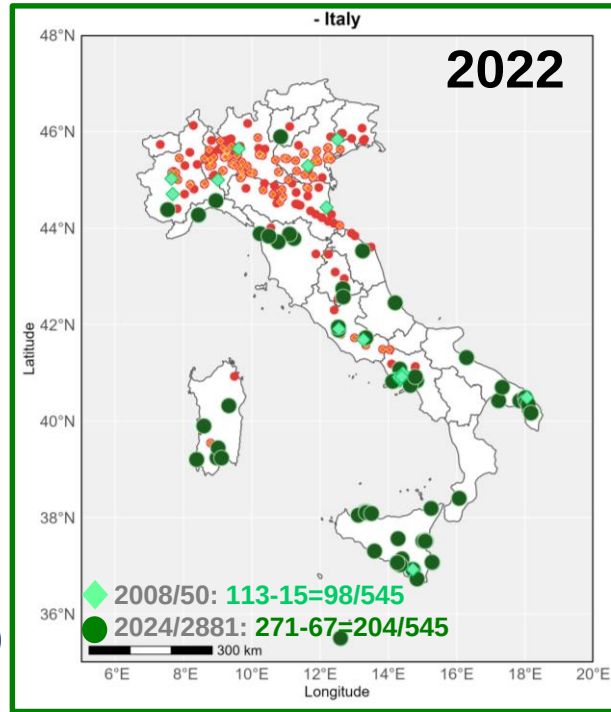


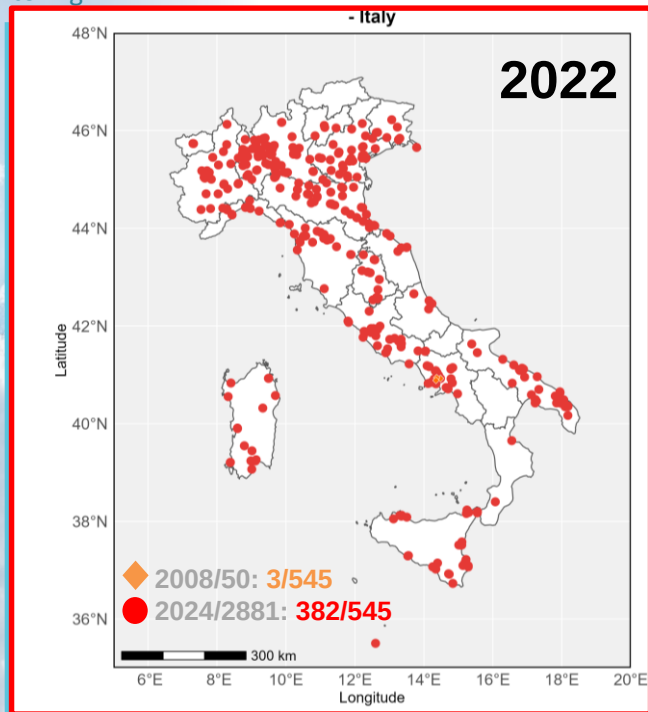


**Siti con Superamenti
delle
Medie giornaliere PM10**

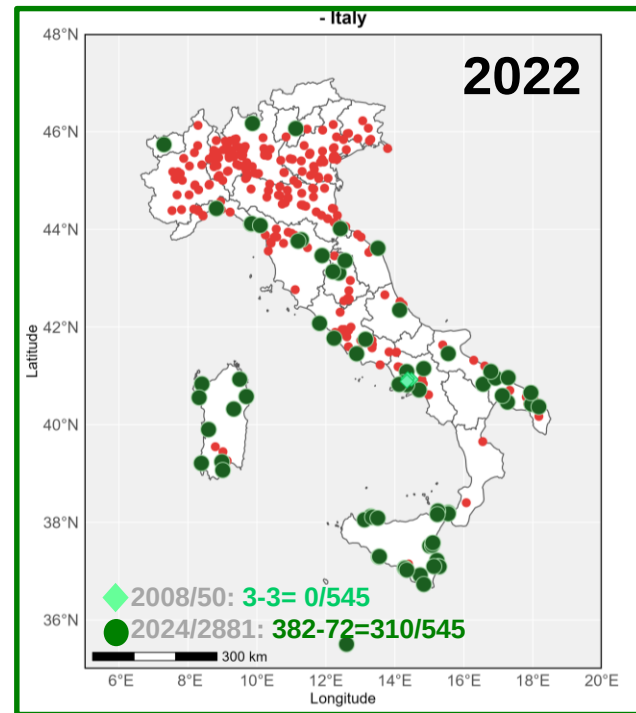
**e siti compliant dopo
scorporo del dust**

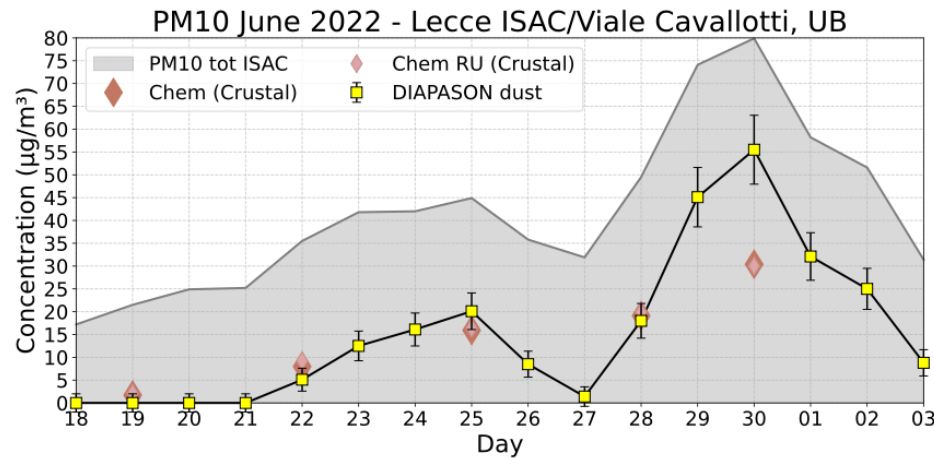
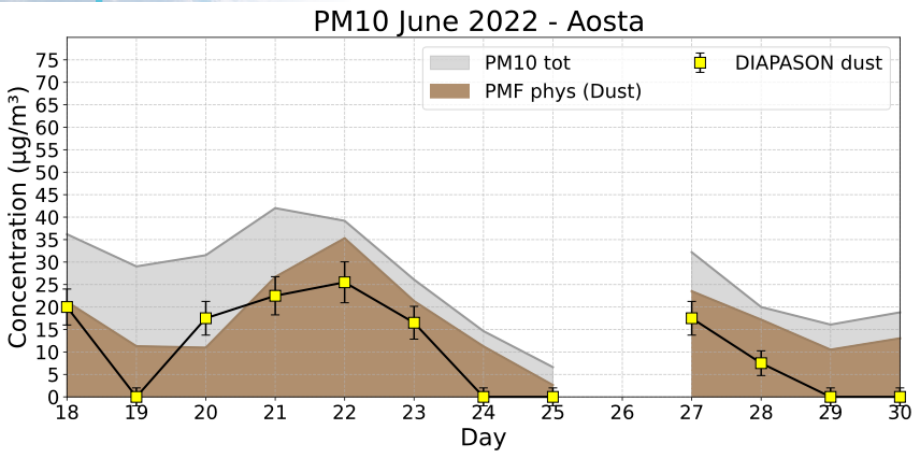
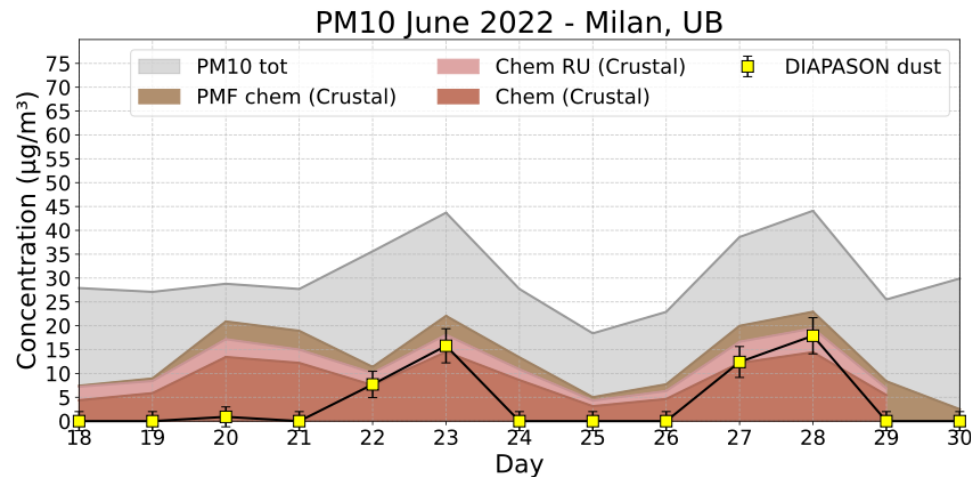
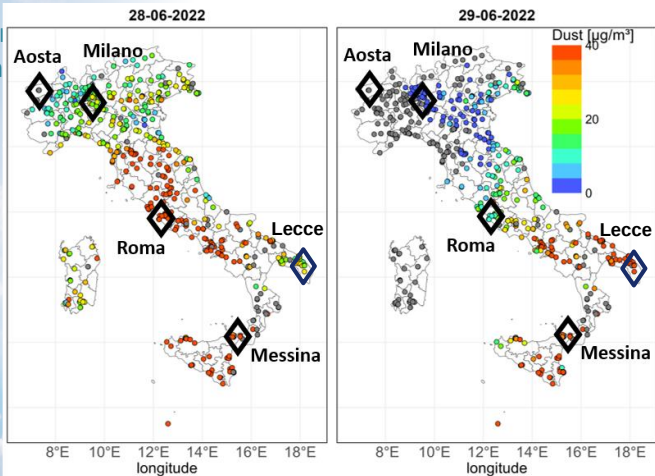
(Direttive 2008/50 e 2024/2881)





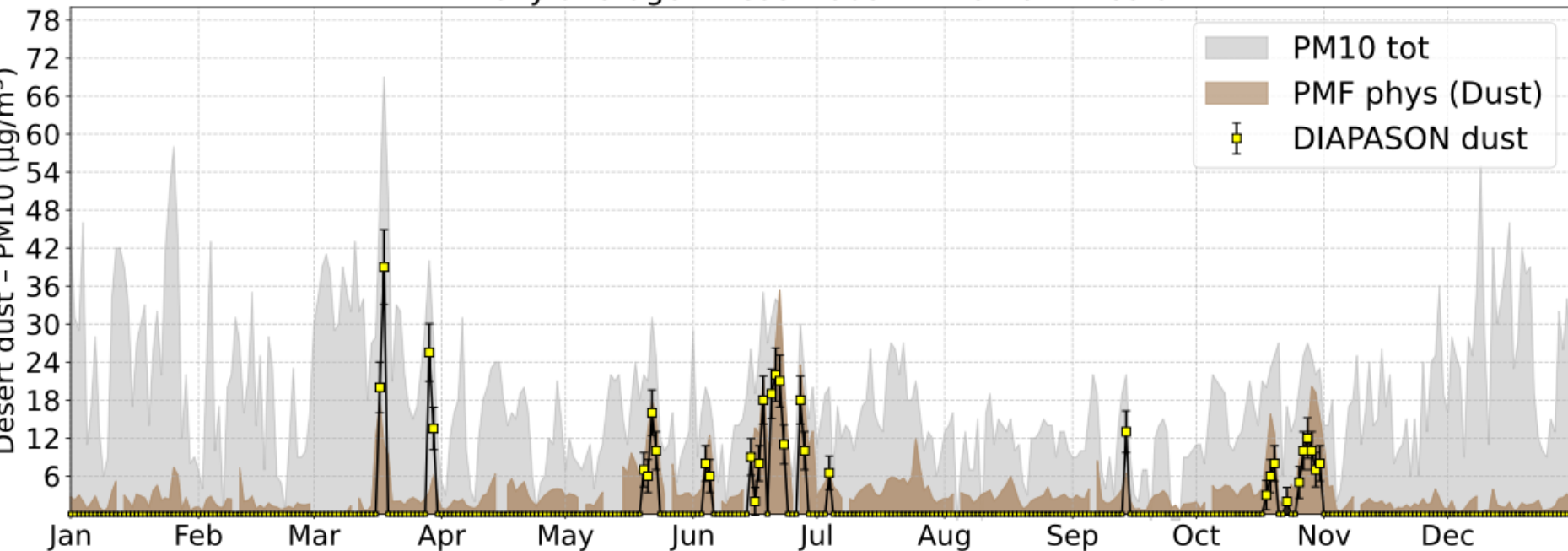
**Siti con Superamenti
delle medie annue PM10
e siti compliant dopo
scorporo del dust**
(Direttive 2008/50 e
2024/2881)







Daily average - Desert dust PM10 2022 Aosta



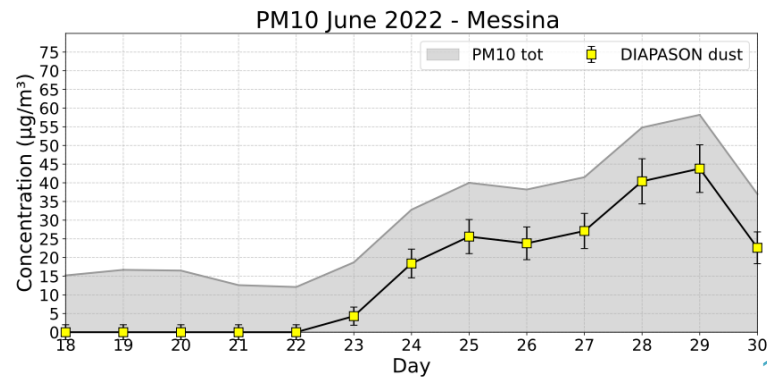
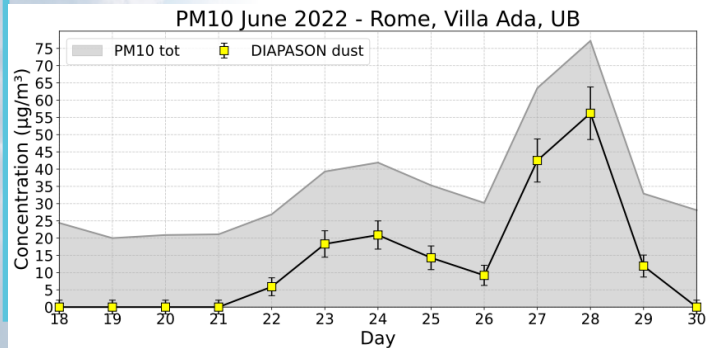
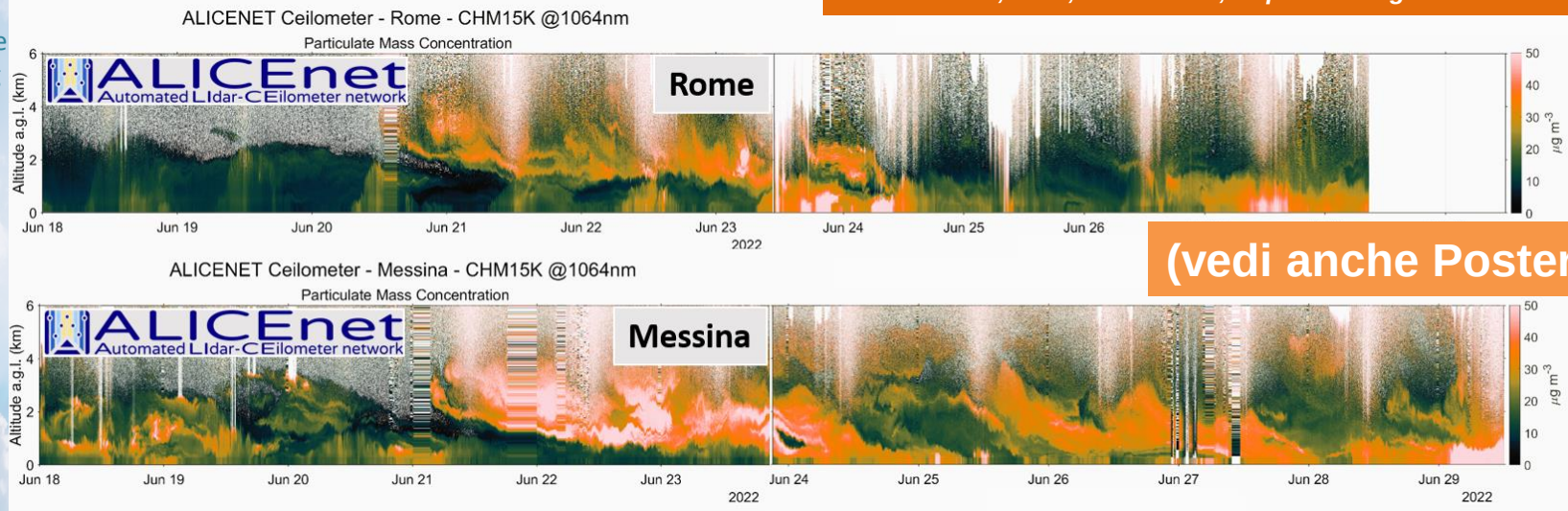
Diemoz et al., AMT 2026 (in press)

(vedi anche Poster 20 & 50)



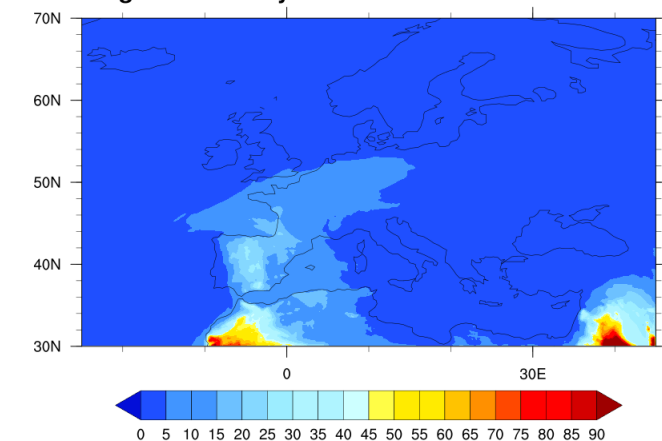
Remote sensing (ALC)

- Bellini et al., 2024, AMT, <https://doi.org/10.5194/amt-17-6119-2024>
- Bellini et al., 2025, Rem. Sens., <https://doi.org/10.3390/rs17030372>

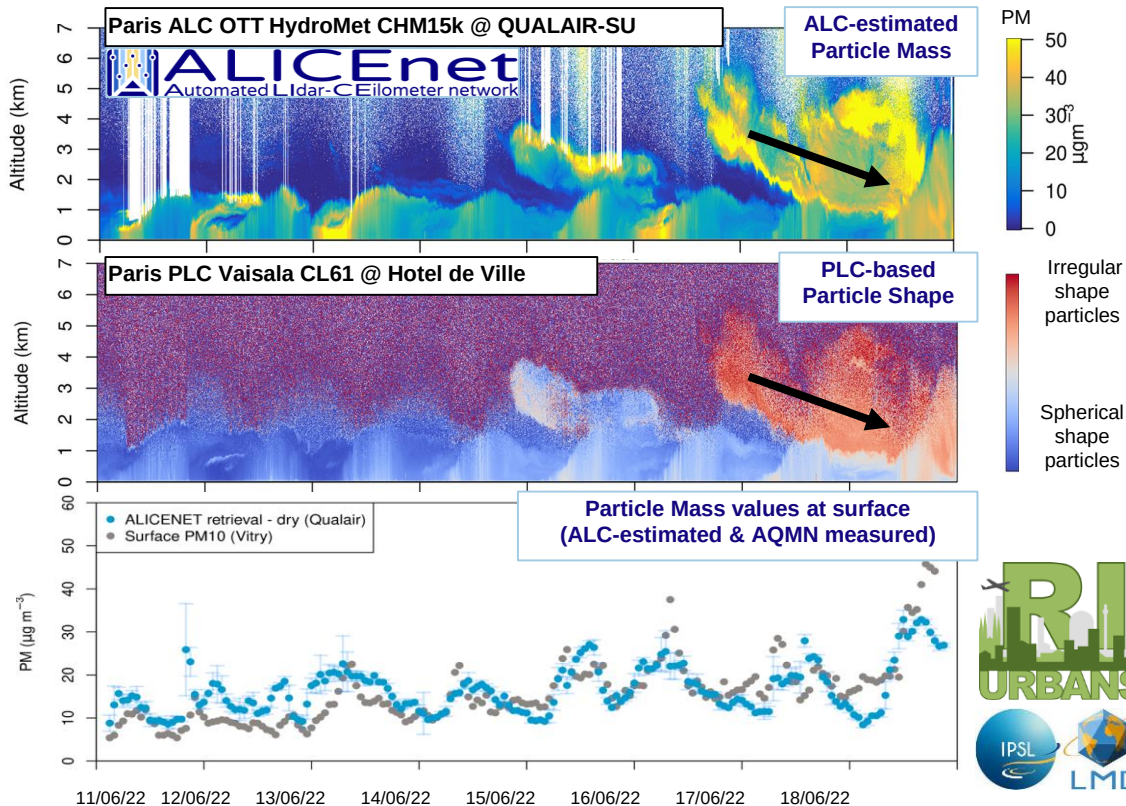
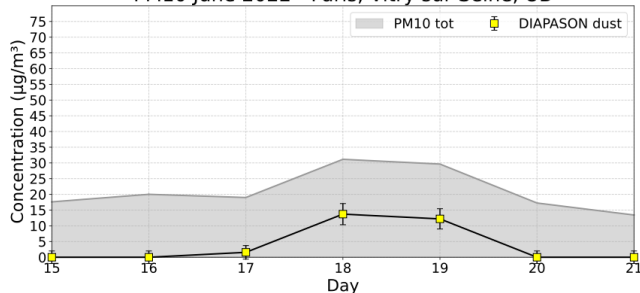


Allargando la prospettiva oltre il contesto nazionale

CAMS Regional Reanalysis for PM10 Dust Fraction 18-06-2022

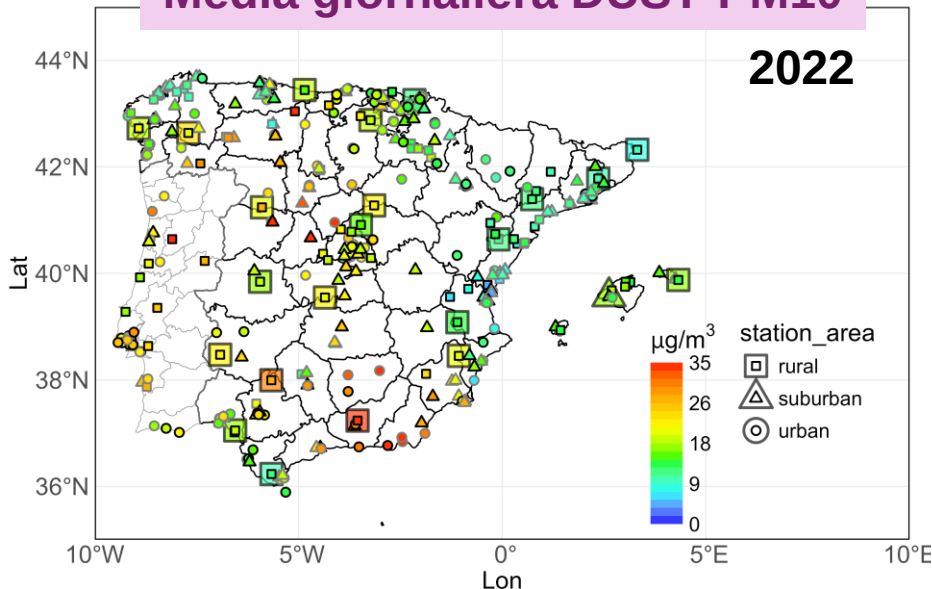


PM10 June 2022 - Paris, Vitry sur Seine, UB

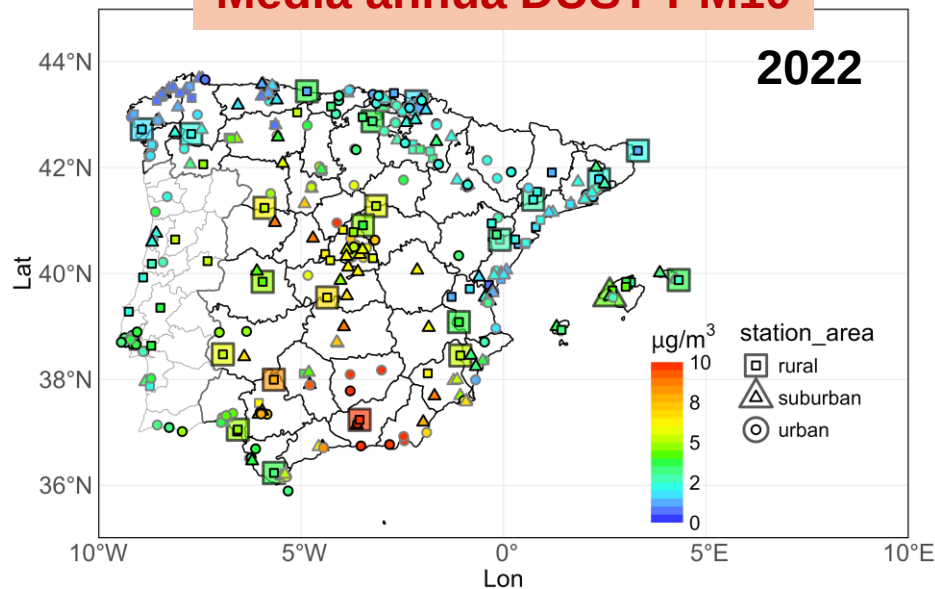


Allargando la prospettiva oltre il contesto nazionale

Media giornaliera DUST-PM10



Media annua DUST-PM10



Confronto tra Metodologia EC e Metodologia DIAPASON
(simboli esterni) (simboli interni)

sulla SPAGNA in collaborazione con X. Querol (IDEA-CSIC)



Atmosphere Monitoring

Grazie per l'attenzione

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