



Training School and Workshop on Dust Aerosol Detection and Monitoring

Data discovery

Outline

Time (CET)	Day 1	Day 2	Day 3	Day 4
10:00 - 10:50		Introduction to satellite data and products	Introduction to ground-based observations	Introduction to model-based forecasts
10:50 - 11:00		Q&A Satellite data and products	Q&A Ground-based observations	Q&A Model-based forecasts
11:00 - 11:50	Introduction to the training platform and Python basics			
11:50 - 12:00	Q&A Training platform and Jupyter notebooks			

Day 1

- Registration and introduction to the training platform
- Introduction to the course material
- Introduction to Jupyter notebooks
- Introduction to basic Python and the xarray library



Jupyterlab Training platform

- Register: <https://login.ltpy.adamplatform.eu/>
- Login: <https://training.ltpy.adamplatform.eu/>

EUMETlab Gitlab repository

- https://gitlab.eumetsat.int/eumetlab/atmosphere/atmosphere/-/tree/master/50_workshops/202111_dust_training_school

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Day 2

Introduction to satellite data and products

Level 1 - RGB composites

- **Meteosat Second Generation (MSG)** true color and dust RGB composite
- **MODIS** true color and dust RGB composite

Level 2 - Aerosol products

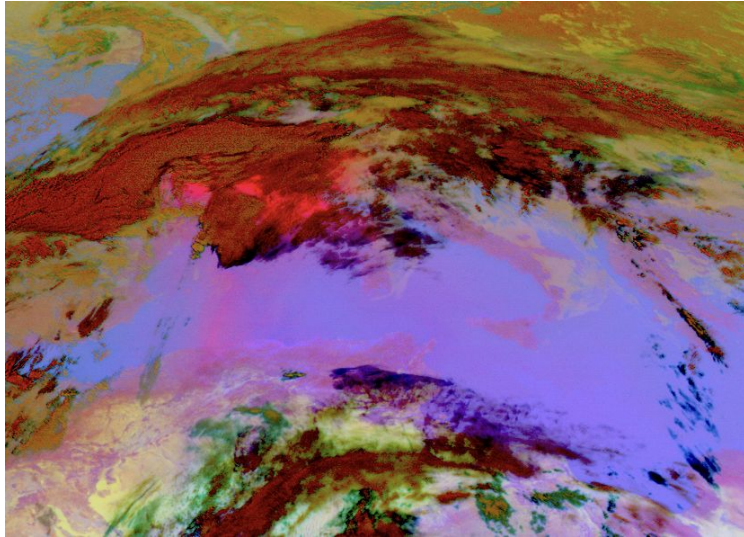
- Sentinel-5P TROPOMI - **Ultraviolet Aerosol Index (UVAI)**
- MODIS 10 km - **Aerosol Product**
- Polar Multi-Sensor Aerosol Optical Properties (PMAp) Product - **Aerosol Optical Depth**

Level 3 - Aggregated products

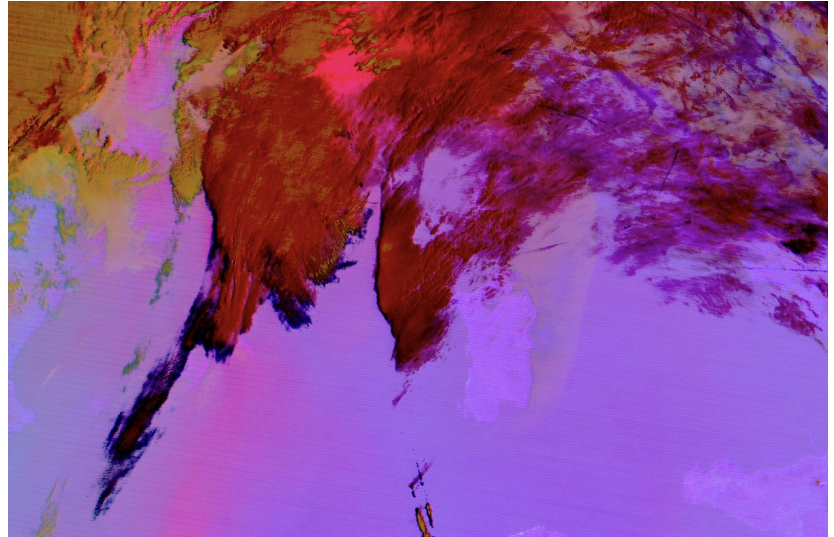
- Metop-A/B/C GOME-2 - **Absorbing Aerosol Index (AAI)**

Level 1 - RGB composites

MSG SEVIRI Dust RGB



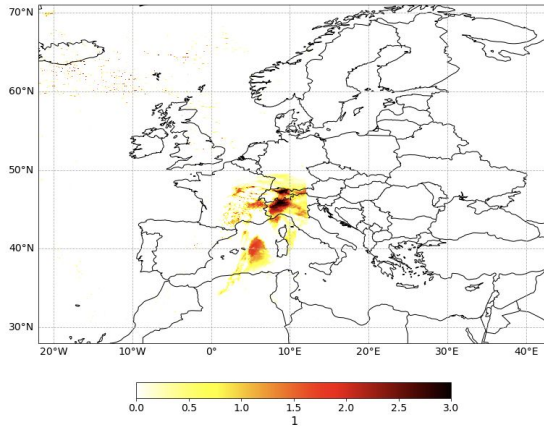
MODIS Dust RGB



Level 2 - Aerosol products

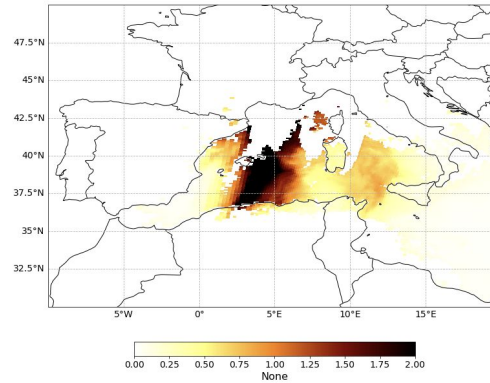
Sentinel-5P UV Aerosol Index (UVAI)

Aerosol index from 388 and 354 nm 2021-02-06T00:00:00.000000000



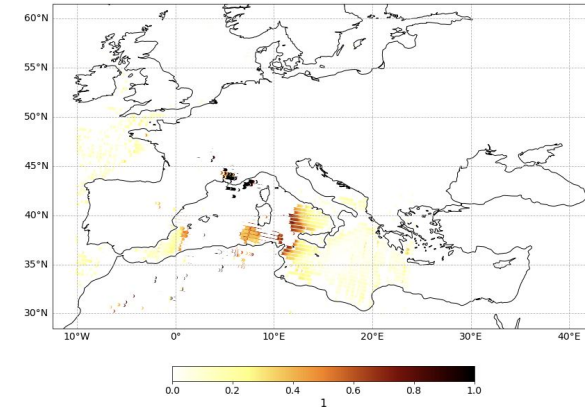
MODIS 10km Aerosol Product

AOT at 0.55 micron for both ocean (Average) (Quality flag=1,2,3) and land (corrected) (Quality flag=3) 06 February 2021



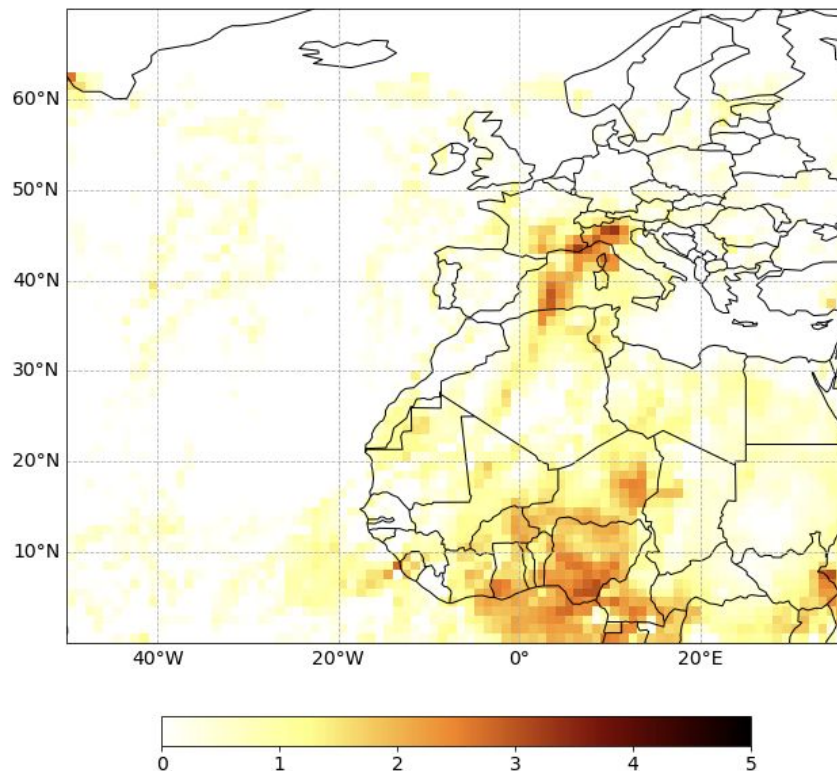
PMAP Aerosol Optical Depth (AOD)

AOD_aerosol_optical_depth_at_550nm - 2021-02-06



Level 3 - Aggregated products

Absorbing aerosol index averaged for each grid cell 2021-02-06



Metop-A/B/C GOME-2 Absorbing Aerosol Index

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Day 3

Introduction to ground-based observations

- **AERONET (Aerosol RObotic NETwork)**
 - Aerosol Optical Depth and Angstrom Exponent
- **EARLINET (European Aerosol Research Lidar Network)**
 - Lidar aerosol backscatter coefficient
- **European Environment Agency (EEA) Air Quality Data**
 - Particulate Matter 2.5 and 10

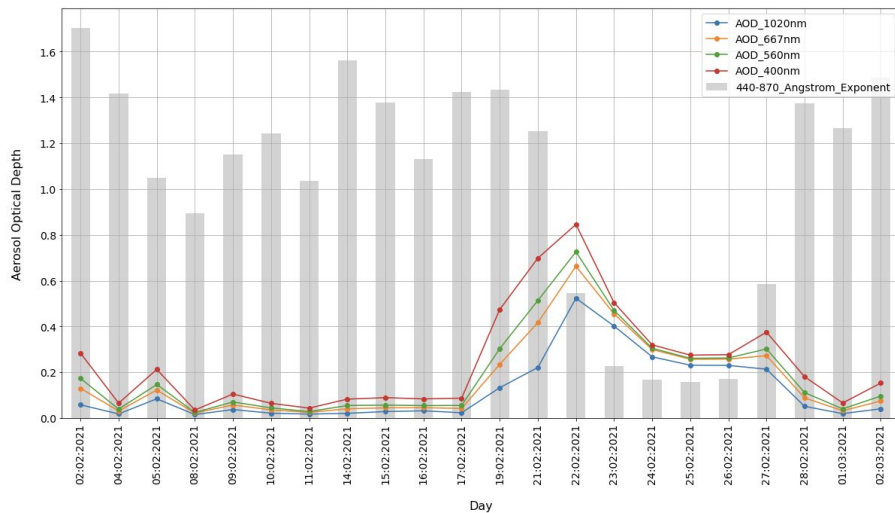


European
Environment
Agency

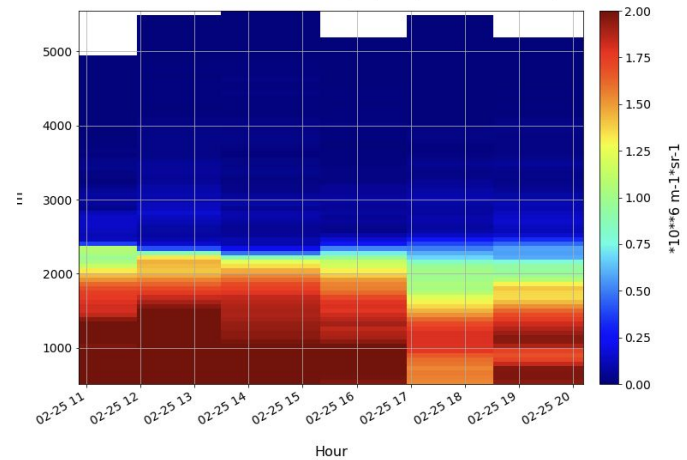


AERONET daily aggregated Aerosol Optical Depth

Daily aggregated Aerosol Optical Depth Level 1.5 data for February 2021 - Ispra, Italy

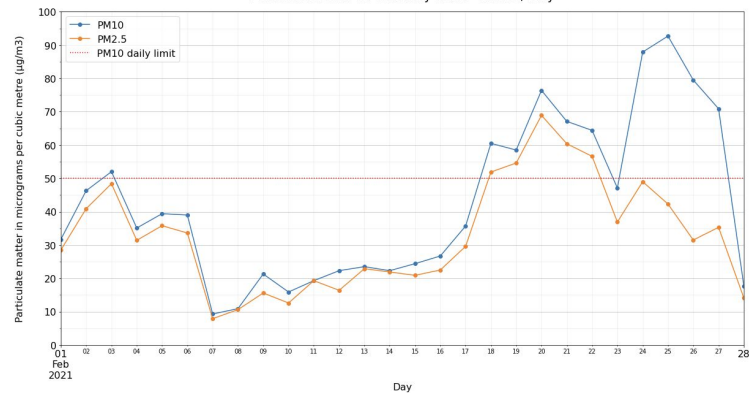


aerosol backscatter coefficient - Ispra, Italy on 25 February 2021



**EARLINET
Aerosol
backscatter
coefficient**

PM2.5 and PM10 for February 2021 - Varese, Italy



**EEA PM2.5
and PM10**

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Day 4

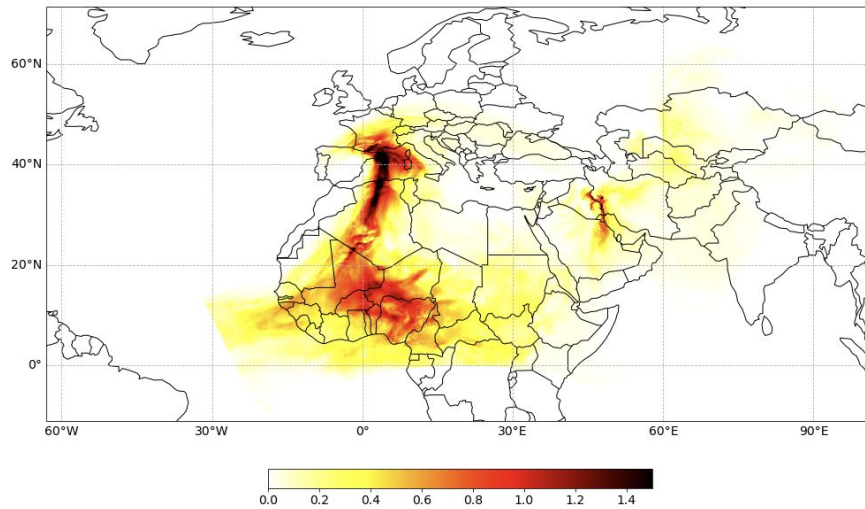
Introduction to model-based forecasts

- **WMO Sand and Dust Storm Warning Advisory and Assessment System (SDS-WAS)**
 - NMMB/MONARCH Dust forecast
- **CAMS global atmospheric composition forecasts**
 - Dust Aerosol Optical Depth
- **CAMS European Air Quality Forecasts and Analyses**
 - Dust concentration

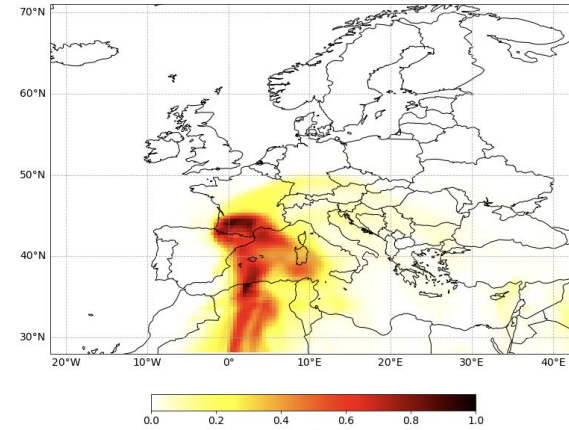
Model-based products

SDS-WAS MONARCH - Dust Aerosol Optical Depth

Aerosol optical depth 2021-02-06T06:00:00.000000000

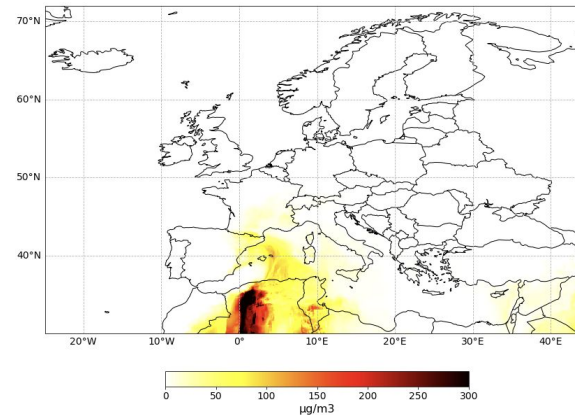


Dust Aerosol Optical Depth at 550nm 2021-02-06T06:00:00.000000000



CAMS global forecasts

mass_concentration_of_dust_in_air 2021-02-06T06:00:00.000000000



CAMS European air quality forecasts