

Atmospheric Sand and Dust Forecast

Prévision du sable et la poussière atmosphérique

Enric Terradellas (1), José M. Baldasano (2) and Emilio Cuevas (1)

(1) AEMET, Spain (2) BSC-CNS, Spain

WMO SDS-WAS programme. Regional Center for Northern Africa,
Middle East and Europe



**Barcelona
Supercomputing
Center**

Centro Nacional de Supercomputación

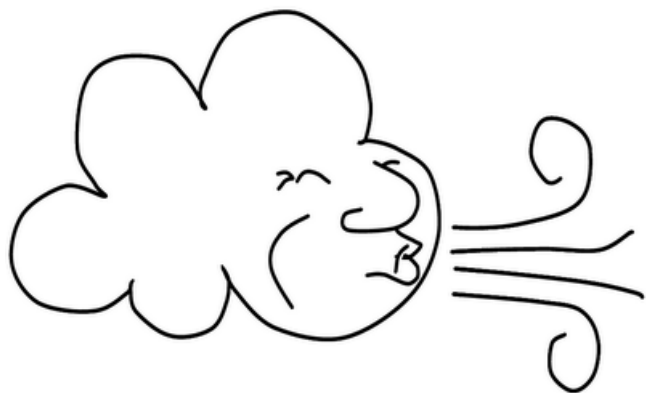


**World
Meteorological
Organization**

Weather • Climate • Water

Sand and Dust Storms

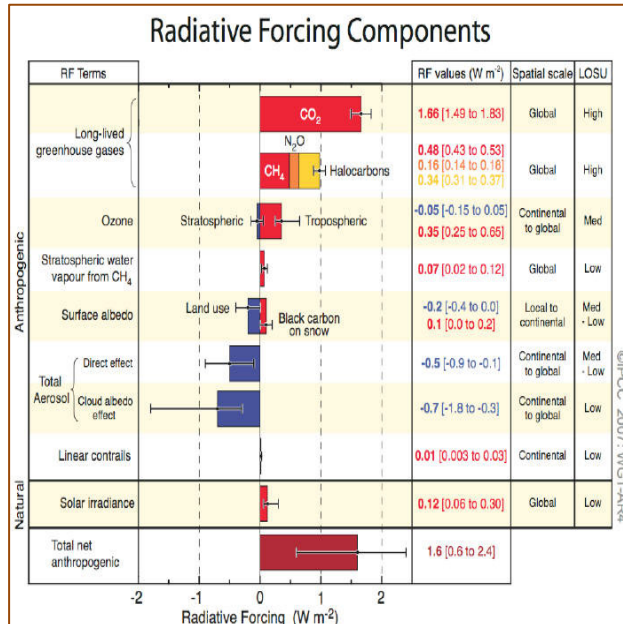
Tempêtes de poussière et de sable



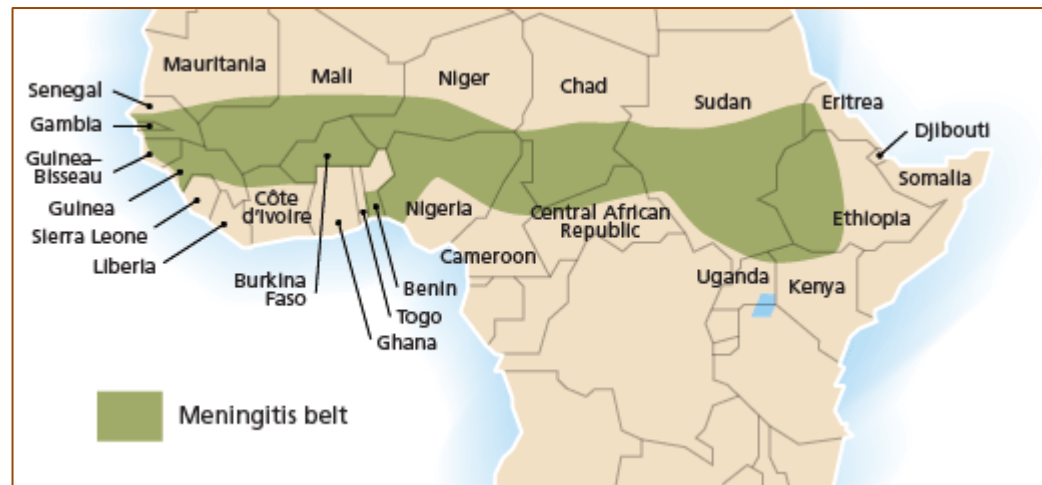
MODIS. 3 Mar 2004

Impacts of sand and dust

Impacts de poussière et de sable



- Human health
- Weather and climate
- Economy (mainly related to reduced visibility)
- Environment (negative and positive)
- ...



WMO SDS-WAS programme

Le programme SDS-WAS de l'OMM

Mission:

To enhance the capacity of countries to produce and deliver to end users timely and precise sand and dust storm forecasts.

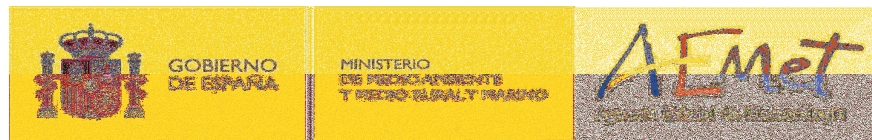
Structure:

- **Regional Center for Northern Africa, Middle East and Europe.
Barcelona, Spain**
- **Regional Center for Asia, Beijing, China**
- **Regional Center for Pan America, Orange, Ca, US**



The Regional Center for NA-ME-E Le Centre Régional pour NA/MO-E

It is managed by a consortium of the Spanish State Met. Agency (AEMET) and the Barcelona Supercomputing Center (BSC-CNS)



Nexus II building. Campus Nord
Catalonia Technical Univ. Barcelona



MareNostrum supercomputer



Objectives of the Regional Center

Objectifs du Centre Régional

- Identify and improve products to monitor and predict atmospheric dust by working with research and operational organizations, as well as with users
- Facilitate user access to information
- Strengthen the capacity of countries to use the observations, analysis and predictions provided by the WMO SDS-WAS programme

<http://sds-was.aemet.es>

NORTHERN AFRICA-MIDDLE EAST-EUROPE (NA-ME-E) REGIONAL CENTER
WMO Sand and Dust Storm Warning Advisory and Assessment System (SDS-WAS)

Log in

World Meteorological Organization
European Centre for Medium-Range Weather Forecasts
AEMet
European Monitoring Center

WMO SDS WAS | Asia Regional Center

HOME ABOUT US FORECAST & PRODUCTS PROJECTS & RESEARCH MATERIALS NEWS EVENTS CONTACT US

You are here: Home

Northern Africa-Middle East-Europe (NA-ME-E) Regional Center

by Francisco Benincasa — last modified May 29, 2012 03:23 PM

Outstanding

- Guidance for forecasters
- 11 lectures on atmospheric mineral dust
- Forecast evaluation
- Compared dust forecasts

Subscribe to the Public Newsletter!

To be informed about our activities, news and events related to dust. Frequency is almost monthly.

Full Name

Your email

Subscribe

Search

Search Site **Search**

Latest News

- [Back trajectories are now available](#)
Sep 04, 2012
- [Comparison of dust models](#)
Aug 29, 2012
- [User data and quicklooks](#)
Aug 29, 2012

Upcoming Events

- [European Aerosol Conference EAC-2012](#)
Sep 03, 2012 - Sep 07, 2012 — Granada, Spain
- [2012 EUMETSAT Meteorological Satellite Conference](#)
Sep 03, 2012 - Sep 07, 2012 — Gdansk, Poland
- [99th International Symposium on Tropospheric Profiling](#)

Dust forecasts

WMO SDS WAS | Northern Africa-Middle East-Europe RC
MEANS: Dust Surface Concentration (µg/m³)
Run: 01 SEP 2012 - WMO SDS SEP 03 SEP 2012 (9+28)

Compared Dust Forecasts

Forecast Evaluation

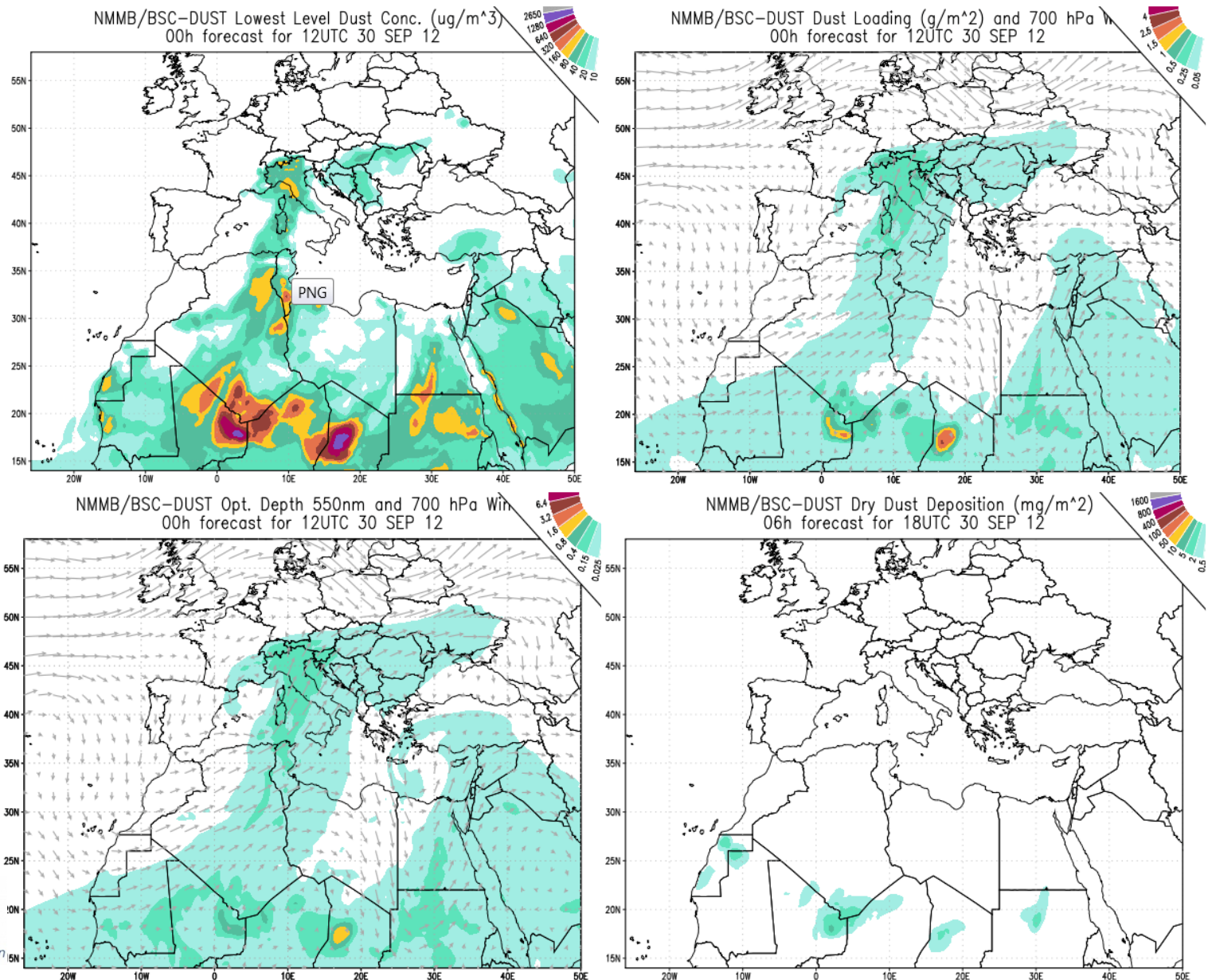
Dust observations

WMO SDS WAS | Northern Africa-Middle East-Europe RC
Run: 01 SEP 2012 - WMO SDS SEP 03 SEP 2012 (9+28)

WMO SDS WAS | Northern Africa-Middle East-Europe RC
Run: 01 SEP 2012 - WMO SDS SEP 03 SEP 2012 (9+28)

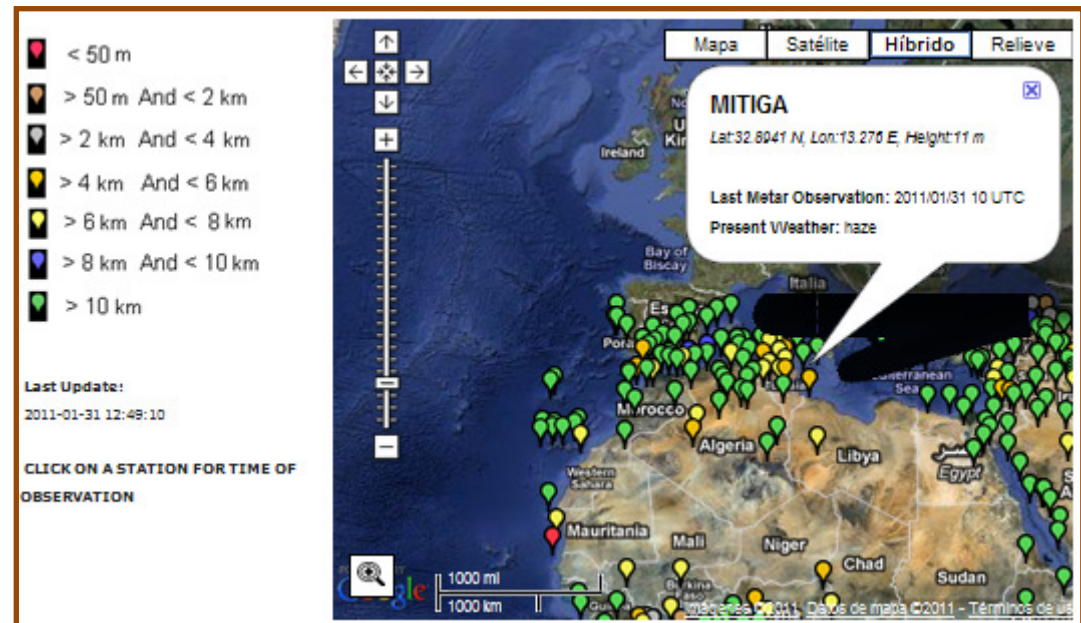
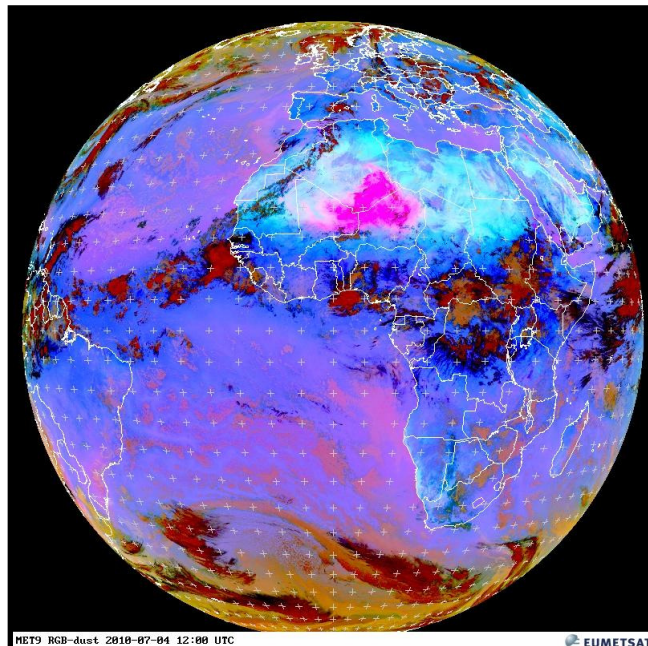
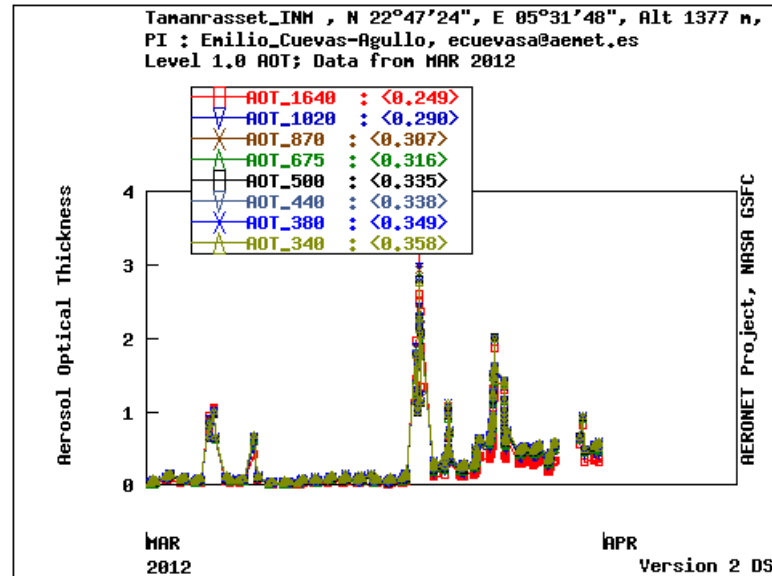
sdswas@aemet.es

Forecast Pr vision



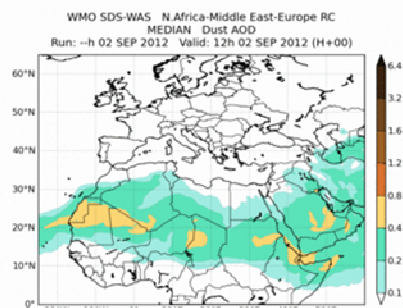
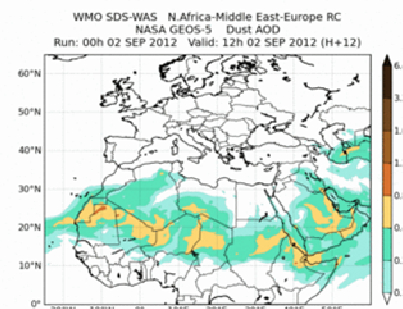
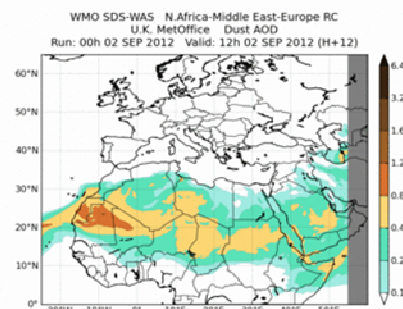
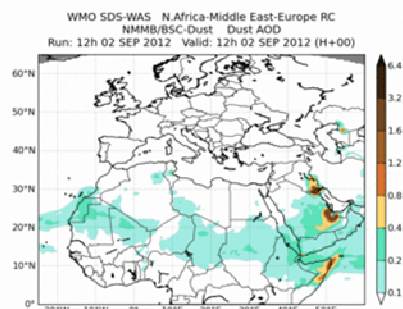
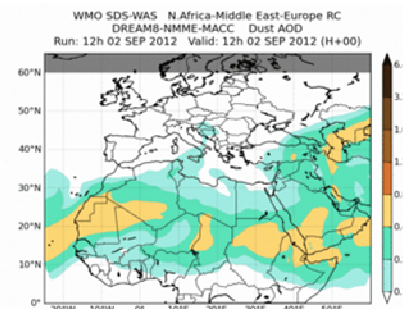
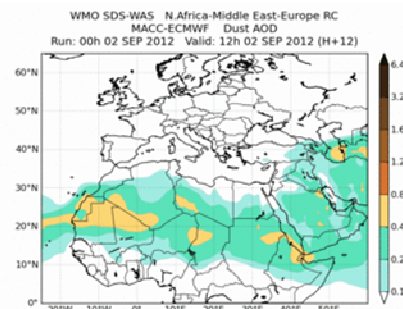
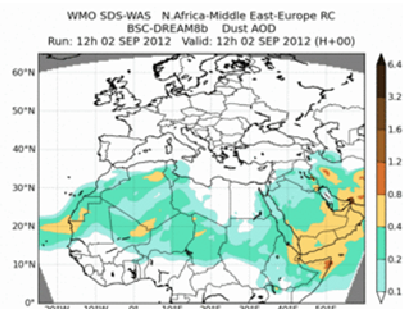
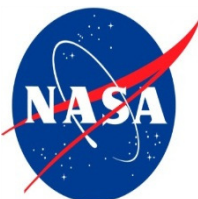
MMB/BSC-
Dust model

Observation



Joint visualization. Dust AOD at 550 nm

Visualisation conjointe. AOD (pous.) à 550 nm



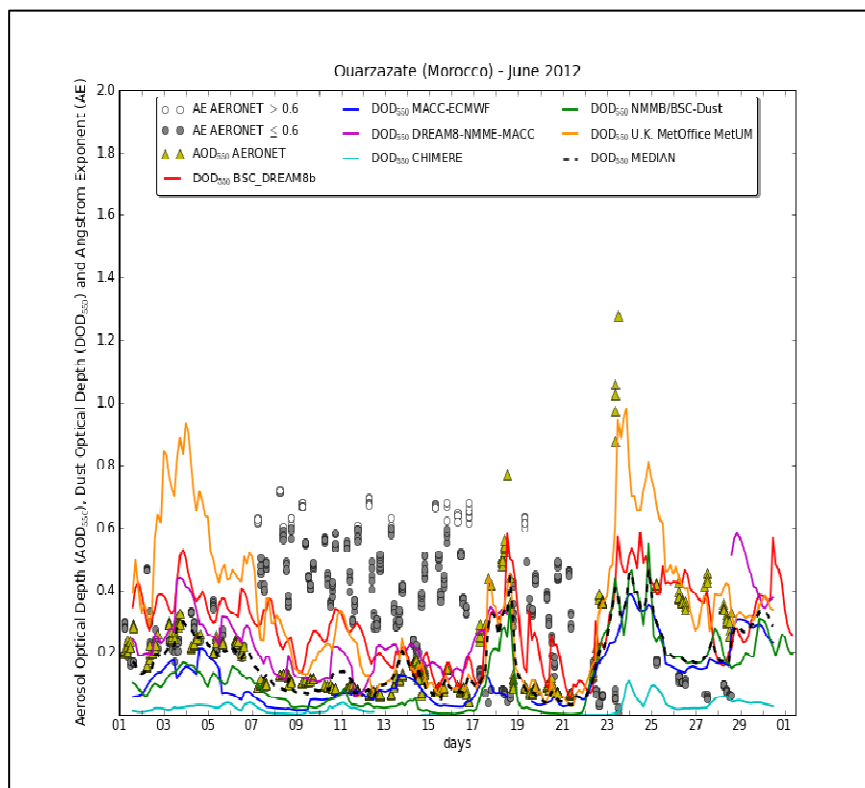
RUN: 2 Sep 2012 VALID: 2 Sep 2012 12:00 – 5 Sep 2012 00:00

Verification with AERONET data

Vérification avec données AERONET



11 AERONET stations are managed by AEMET or the BSC-CNS



OUARZAZATE (Morocco). PI: E. Cuevas (AEMET) and T. Zaidouni (DMN)

Ongoing research:

Verification of surface concentration using PM₁₀ from air quality monitoring stations and horizontal visibility from METAR/SYNOP.

Verification of vertical profiles using data from lidar and ceilometers.

Capacity building

Le renforcement des capacités



8-12 Nov 2010: Training Week on Satellite Meteorology. Barcelona

13 Nov 2010: Lectures on Atmospheric Mineral Dust and its Impact on Human Health, Environment and Economy. Barcelona

15-19 Nov 2010 Training Week on WMO SDS-WAS products. Barcelona



22-26 Feb 2011: Training on Meteorological Services, SDS Forecast and Early Warning System. Istanbul, Turkey



21-25 Nov 2011: 2nd Training Course on WMO SDS-WAS (satellite and ground observation and modelling of atmospheric dust). Antalya, Turkey





5-9 Nov 2012: II Lectures on Atmospheric Mineral Dust. Barcelona

26-28 Nov 2012: Workshop on Meteorology, Sand and Dust Storm (SDS), Combating Desertification and Erosion. Ankara, Turkey



Operational forecast

Prévision opérationnelle

Sep 2012. The WMO CBS-15 meeting recommends the designation of the Center as Regional Specialized Meteorological Center with Specialization on Atmospheric Sand and Dust Forecast(RSMC-ASDF).

Jul 2013. It is expected that the WMO Executive Council meets the recommendation and the RSMC starts working.

Thanks for your attention !!
Merci de votre attention !!



<http://sds-was.aemet.es>
sdswas@aemet.es