

# Emerging SDS-WAS research issues

## Address Limitation

- Physical processes leading to specific types, very small scale of SDS, like haboob, etc.
- Interaction among dust aerosol and radiation and clouds
- Heterogeneous reaction on dust interface

## Advance Method

- Data assimilation of SDS
- Retrieving dust mineralogy from spaceborne measurements
- Sub-seasonal to seasonal (S2S) of SDS

## Attribution

- Attributing changes in dust sources to land mismanagement, desertification and climate change

## New Observation

- New technique and methodology of observation of atmospheric aerosols optimized to mineral dust

## Application

- Better coordinating and harmonising the process of transferring dust observations and predictions to users (in aviation, solar energy, health, air-quality, climate service communities).



**Activities from Research to Services** are a very important component of SDS-WAS. We are **working closely with CBS**, and **SDS-WAS** can be considered as a **good example** of realization of the new strategy that you suggest now **for Research-to-Service** within the new structure of WMO.





# WMO AIRBORNE DUST BULLETIN

Sand and Dust Storm  
Warning Advisory and Assessment System

No. 1 | February 2017



# BULLETIN DE L'OMM SUR LES POUSSIÈRES ATMOSPHÉRIQUES

Système d'alerte, d'avis et d'évaluation concernant les tempêtes de sable et de poussière

No1: En: [https://library.wmo.int/opac/index.php?lvl=bulletin\\_display&id=3902](https://library.wmo.int/opac/index.php?lvl=bulletin_display&id=3902)  
Fr: [https://library.wmo.int/opac/index.php?lvl=notice\\_display&id=19879](https://library.wmo.int/opac/index.php?lvl=notice_display&id=19879)  
Ar: [https://library.wmo.int/opac/index.php?lvl=notice\\_display&id=19881](https://library.wmo.int/opac/index.php?lvl=notice_display&id=19881)  
Zh: [https://library.wmo.int/opac/index.php?lvl=notice\\_display&id=19883](https://library.wmo.int/opac/index.php?lvl=notice_display&id=19883)

## WMO SDS-WAS web-sites and reports:

<http://www.wmo.int/sdswas>  
<https://public.wmo.int/en/our-mandate/focus-areas/environment/sand-and-dust-storm>

## SDS-WAS Regional Nodes and Operational Forecasts:

for Northern Africa, Middle East and Europe: <http://sds-was.aemet.es/>;  
for Asia: [http://eng.nmc.cn/sds\\_was.asian\\_rc](http://eng.nmc.cn/sds_was.asian_rc); for the Americas:  
<http://sds-was.cimh.edu.bb/> Operational Barcelona Center:  
<http://dust.aemet.es/>



# نشرة التراب الجوي للمنظمة العالمية للأرصاد الجوية

نظام الإصدار بالحواسف الرملية والترابية وتقييمها التابع للمنظمة (WMO)



# WMO浮尘公报

沙尘暴预警咨询和评估系统

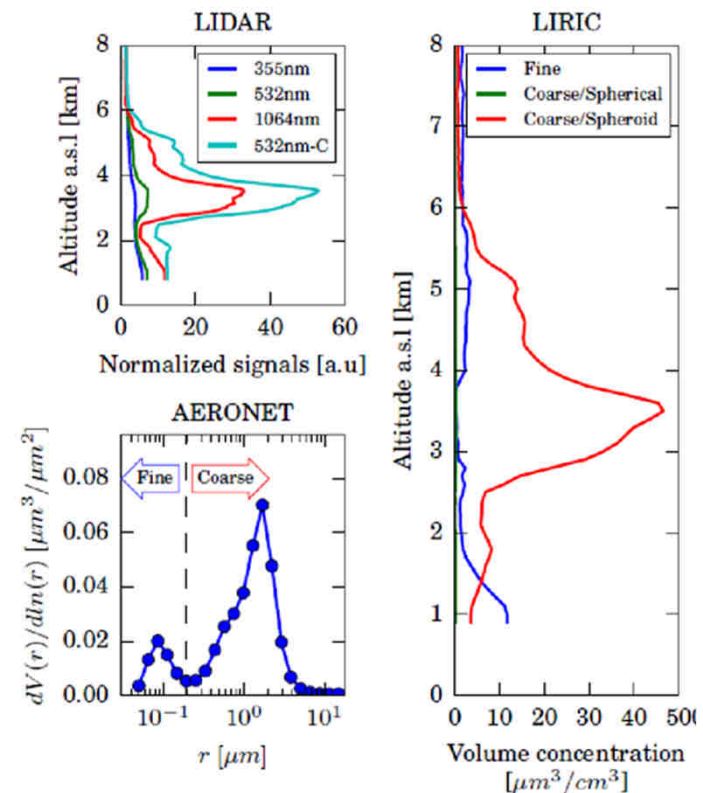
No 2: En: [https://library.wmo.int/opac/doc\\_num.php?explnum\\_id=4572](https://library.wmo.int/opac/doc_num.php?explnum_id=4572)  
FR: [https://library.wmo.int/opac/doc\\_num.php?explnum\\_id=4573](https://library.wmo.int/opac/doc_num.php?explnum_id=4573)  
Ar: [https://library.wmo.int/opac/doc\\_num.php?explnum\\_id=4574](https://library.wmo.int/opac/doc_num.php?explnum_id=4574)  
Zn: [https://library.wmo.int/opac/doc\\_num.php?explnum\\_id=4580](https://library.wmo.int/opac/doc_num.php?explnum_id=4580)



# Another key SDS-WAS research result

## WHITE PAPER ON DESERT DUST OBSERVATIONS

Lucia Mona (CNR, Italy), Vassilis Amiridis (NOA), Sara Basart (BSC, Spain), Angela Benedetti (ECMWF), Emilio Cuevas (AEMET, Spain), Valentin Foltescu (UNEP), Alexander Haefele (MeteoSwiss, Switzerland), Thomas Popp (DLR, Germany), Peter Knippertz (KIT, Germany), Fabio Madonna (CNR, Italy), Slobodan Nickovic, Gelsomina Pappalardo (CNR, Italy), Carlos Pérez García-Pando (BSC, Spain), Sergio Rodríguez (CSIC, Spain), Sangboom Ryoo (KMA, Korea), Andrea Sealy (CIMH, Barbados), Nobuo Sugimoto (NIES, Japan), Enric Terridellas (AEMET, Spain), Bernadette Weinzierl (University of Wien, Austria)



Reviews the state-of-the-art of observational capability for mineral dust. In particular, it describes the observational capabilities for different measurements platforms: near surface, ground-based (and airborne) remote sensing, and satellite ones.

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