

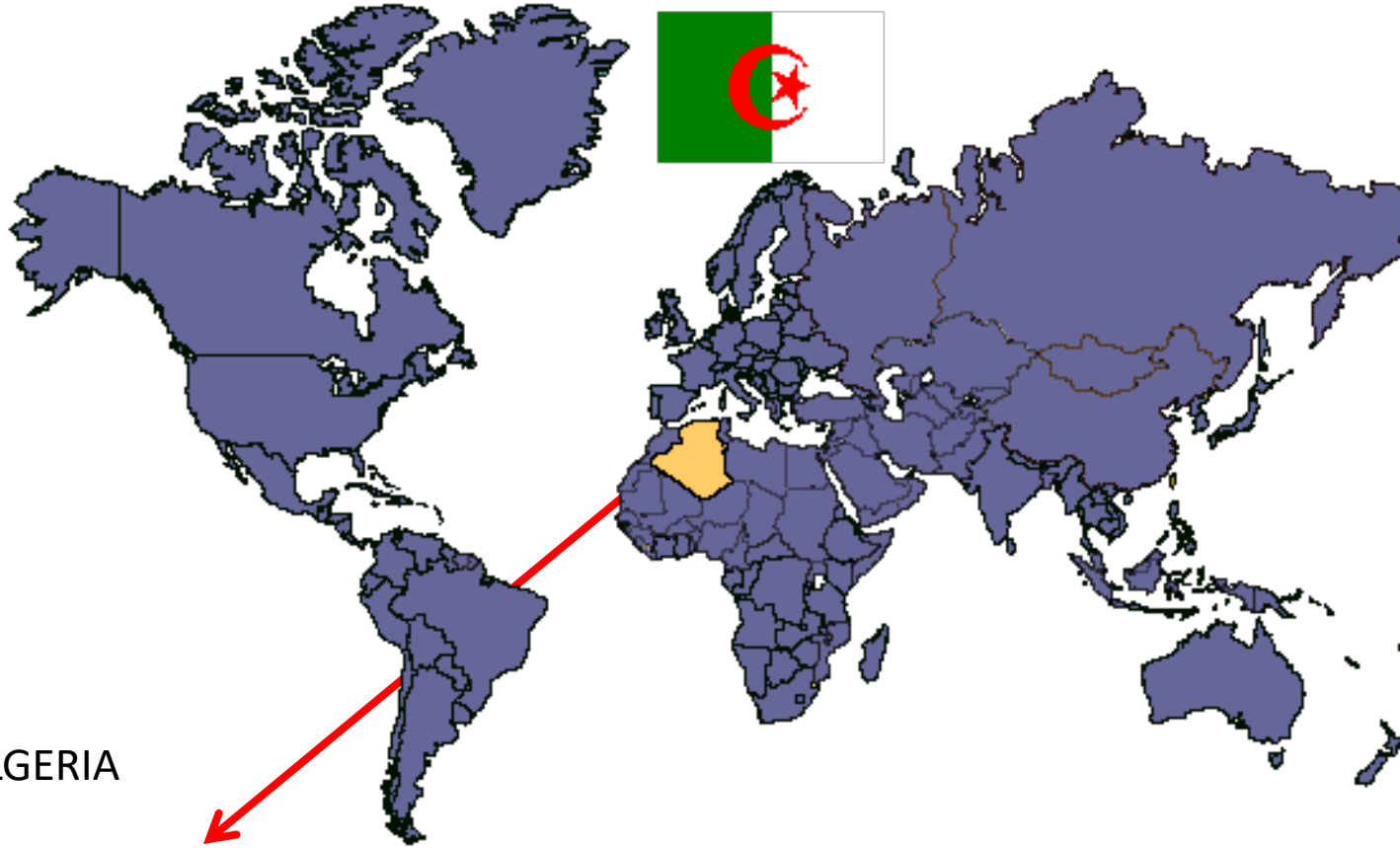
MINISTRY OF TRANSPORTS
ALGERIAN METEOROLOGY SERVICE
POBox 31 Tamanrasset 11000 - Algeria

Title of Presentation :

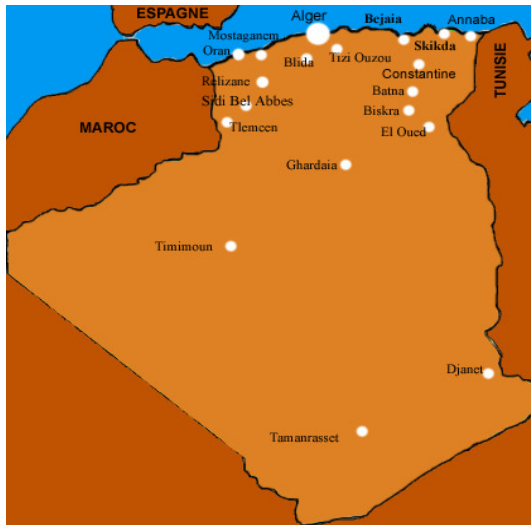
EVENTS OF WIND SAND AND HAZE IN
ALGERIA SAHARA

Presented by :
M.MIMOUNI , MANAGER OF GAW PROGRAM

Email adress : m_mimouni_dz@yahoo.fr



ALGERIA





Affichez les conditions de circulation actuelles pour planifier facilement votre trajet.



diene

Annonce

SYNOPTIC STATIONS IN ALGERIA

ABOUT 80 PROFESSIONNALS STATIONS

37 are working 06-18 UTC (day time) and
other H24 (day/night time)

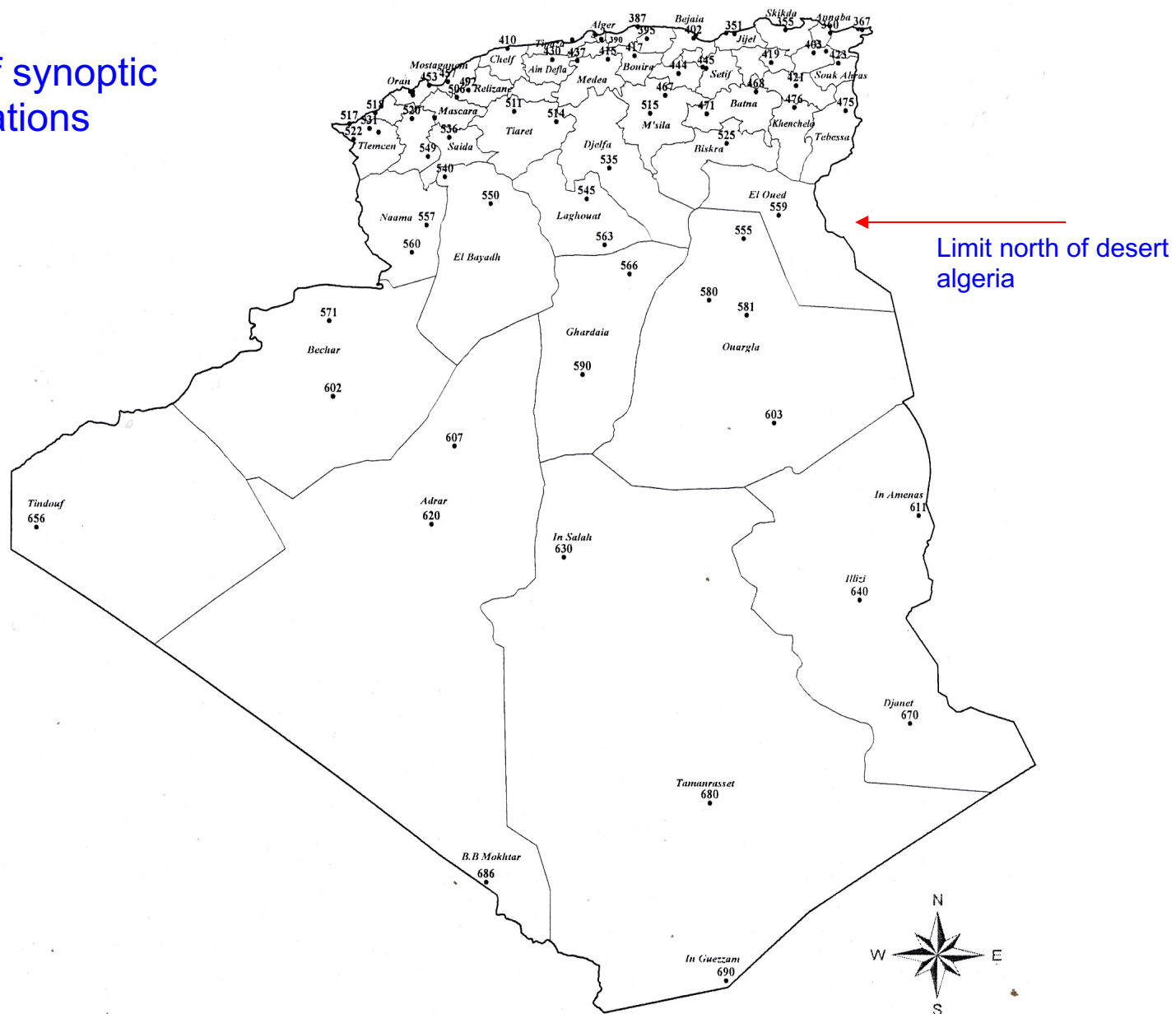
Observations of meteorological parameters:

Temperatures , Rainfall , Winds , Humidity ,
Pressions , Visibility (estimated)

Phenomenes Meteorological In Sahara are:

Haze , Dust Storm, Sand Wind.

Map of synoptic Stations



FREQUENCES OF DAYS OF HUNTING SAND , DUST STORM AND SAND HAZE IN ALGERIAN SAHA

a- DUST STORM

In meteorological stations , Dust Storm is indicated when 03 conditions are satisfy (fill up) :

Visibility are less than 01 km

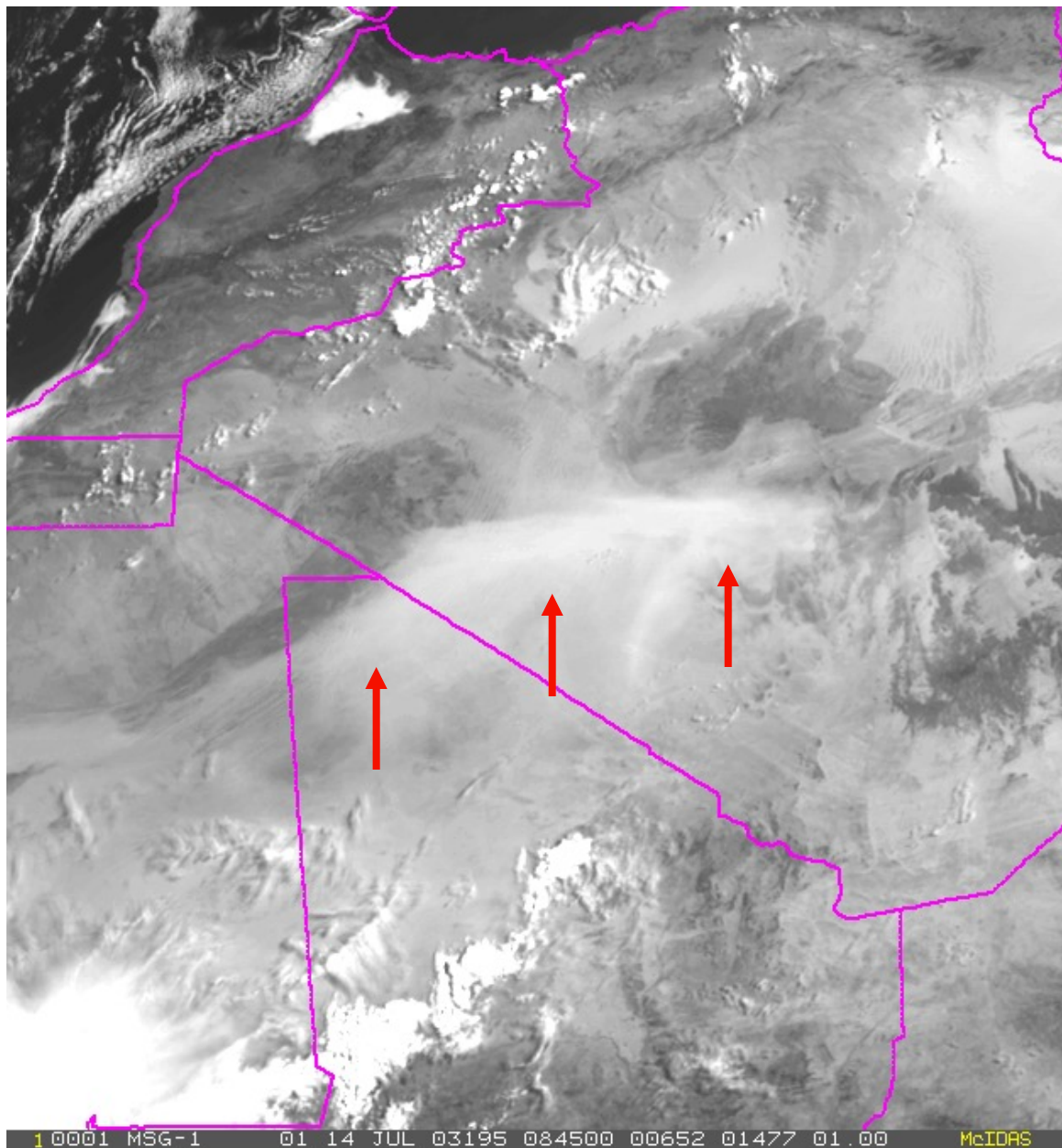
SKY not visible

Mean of wind speed more or equal 16 m/s

b- SAND WIND : is indicated when the observer see that the sand is displaced by the wind with speed more than 5 m/s , Visibility is less than 10 km .

c- Sand Haze is noted when the sand is suspended in the low atmosphere and reduce the visibility less than 5 km .

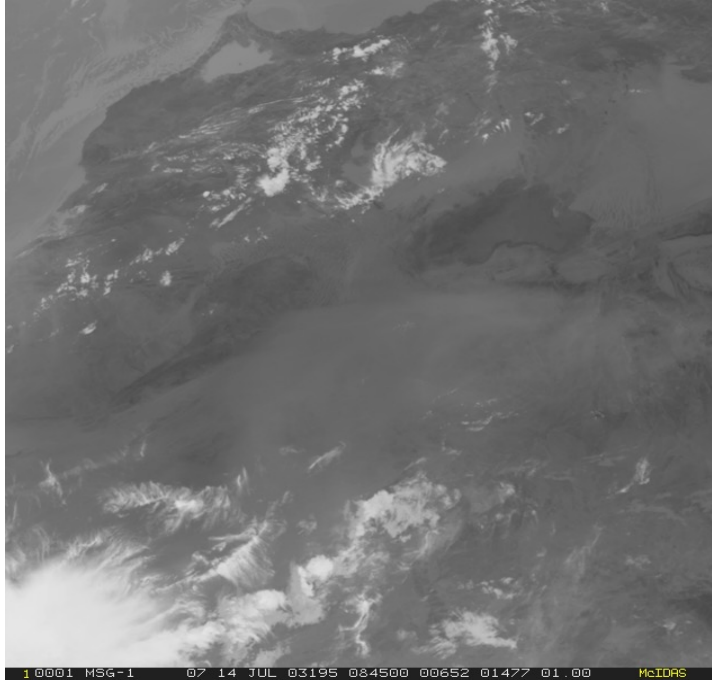
This situation is particularly observed when the speed wind is low .



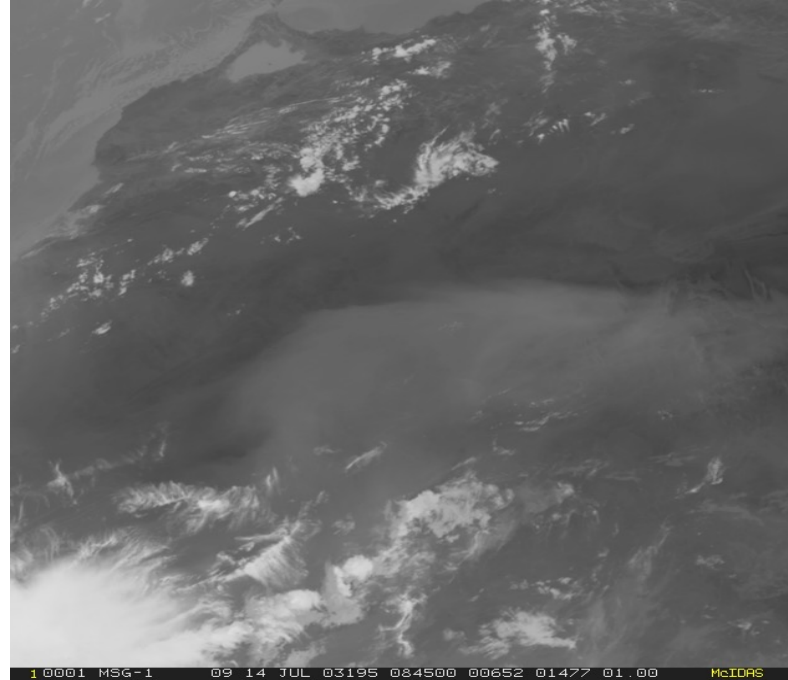
MSG imagery showing
a **dust storm** over
Algeria, which was
triggered by a major
convective storm (squall
line)

MSG-1
14 July 2003
08:45 UTC
Channel 01
(VIS0.6)

Picture by Jochen Kerkmann (Eumetsat)



Channel 07 (8.7 μm)
(10.8 μm)

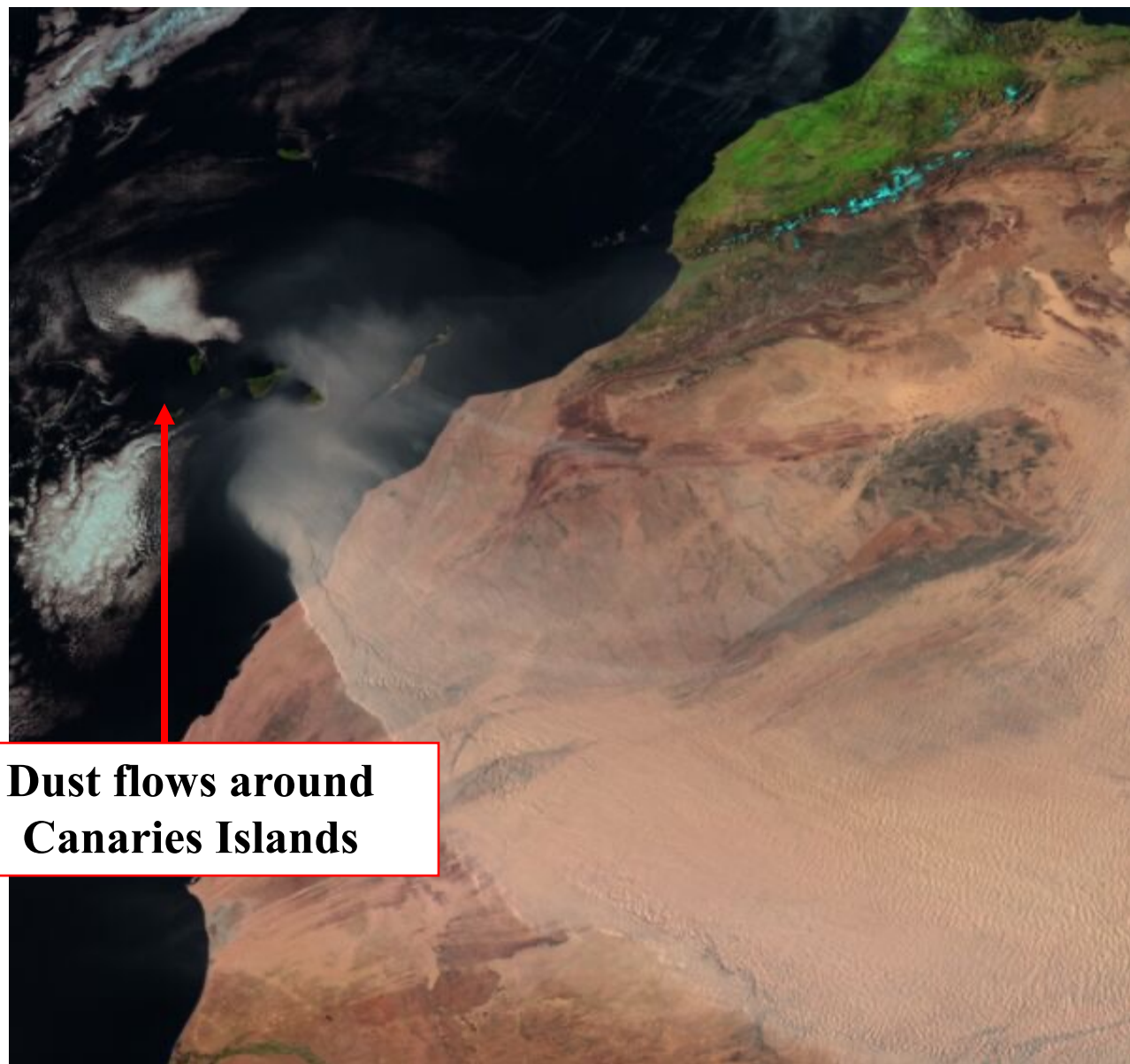


Channel 08 (9.7 μm)

Channel 09

MSG **IR** imagery on 14 July 2003 at 08:45 UTC
showing a **dust storm** over Algeria

Picture by Jochen Kerkmann (Eumetsat)



**Dust flows around
Canaries Islands**

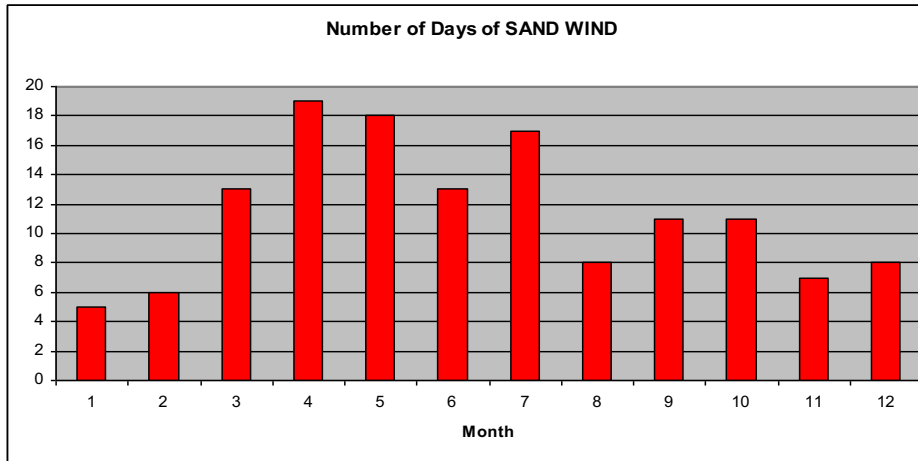
MSG-1
3 March 2004
17:00 UTC
RGB
Composite
R = NIR1.6
G = VIS0.8
B = VIS0.6

Picture by Jochen Kerkmann (Eumetsat)

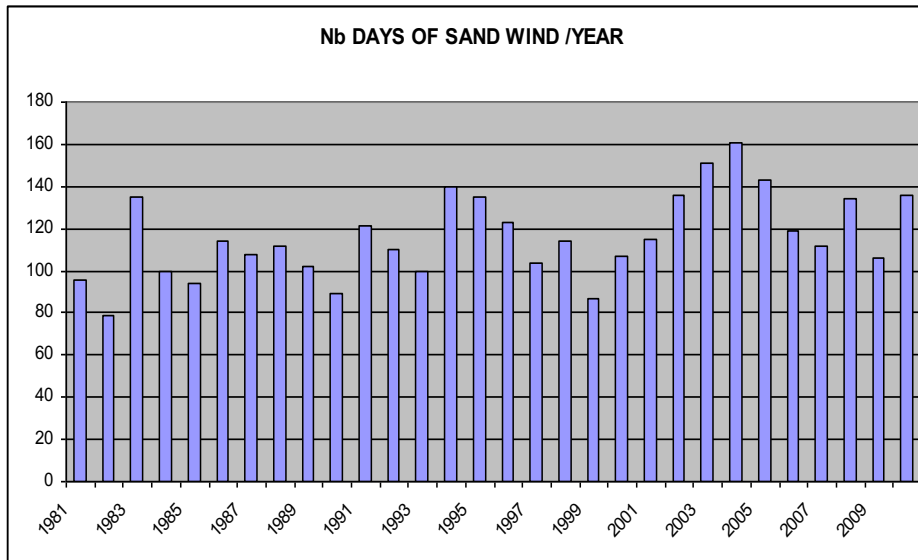
NUMBER OF DAYS /MONTH OF SAND WIND

STATION : IN-SALAH

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Nb Days	5	6	13	19	18	13	17	8	11	11	7	8



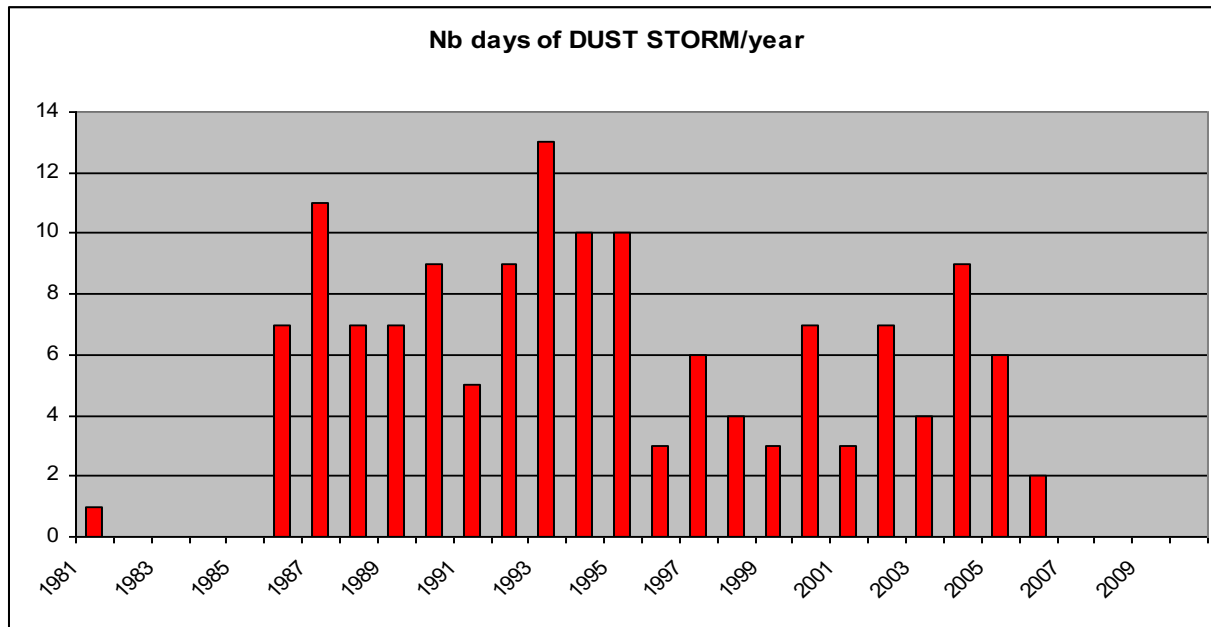
The maximum of SAND WIND are in April, May and July



The mean by year is 116 days (32 %) of Sand Wind

The max. = 161 days

The min. = 79 days



The average of dust storm by year is 5 days

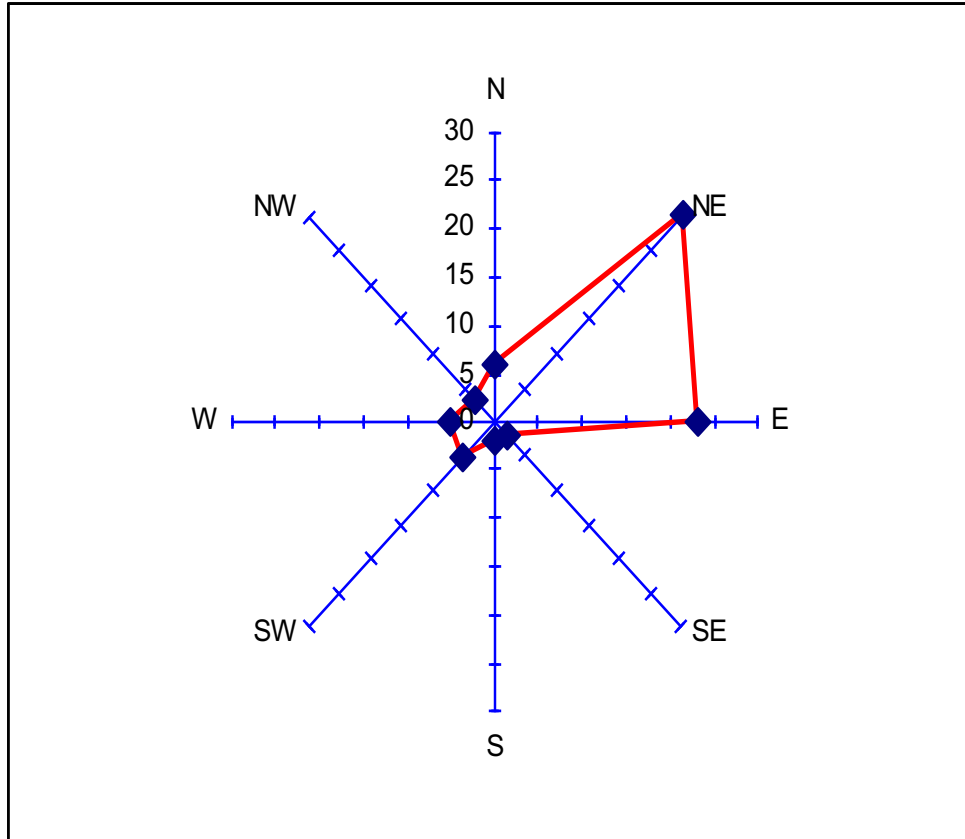
The maximum is : 13 days (1993)

The maximum by month is observed : Mars , April and May : 01 day

Frequency (%) of wind direction at station : In-salah

Mois	N	NE	E	SE	S	SW	W	W	calm
Jan	9	34	19	1	1	3	2	3	29
Feb	7	34	22	1	1	5	4	3	25
Mar	7	31	19	1	2	6	6	3	24
Apr	6	27	18	2	2	9	9	3	24
May	5	24	20	2	3	9	9	4	24
Jun	6	25	25	3	3	5	7	4	22
Jul	4	31	39	4	2	2	2	2	15
Aug	4	32	37	4	3	2	2	2	15
Sep	6	26	23	3	3	5	5	4	25
Oct	6	30	19	2	2	6	4	3	29
Nov	6	31	16	1	1	5	3	2	35
Dec	8	31	17	1	1	4	2	2	34
Year	6	30	23	2	2	5	5	3	25

Graph of Frequency Direction of Wind



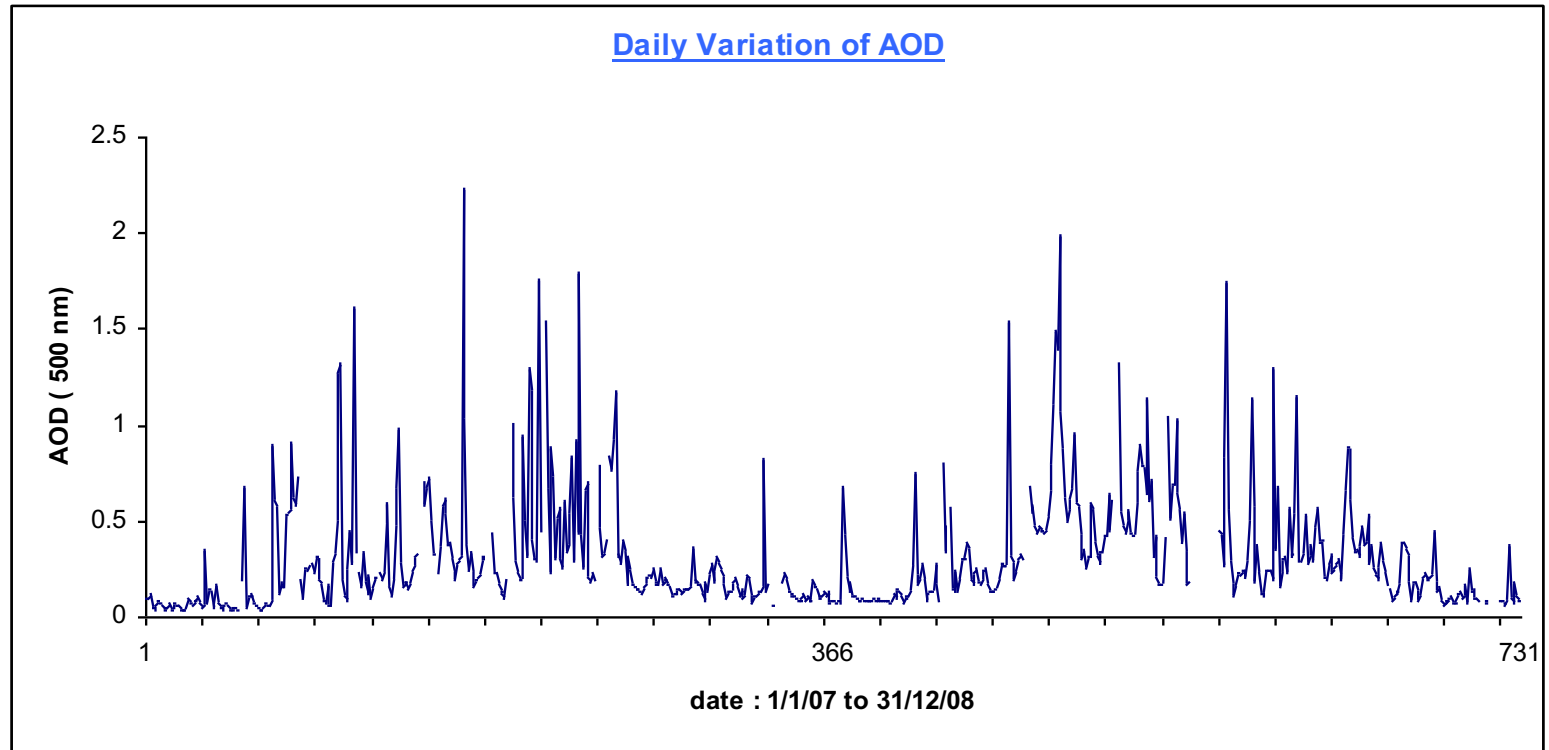
MONITORING OF AEROSOL AT TAMANRASSET

MEASURE OF Aerosol Optical Depth (AOD)

Since October 2006 , a twining collaboration between GAW station of IZANA (Canaries islands) and Tamanrasset /Assekrem , Installation of a Cimel Photometer at Tamanrasset for measure of AOD (AERONET Project) .

- PHOTOMETER
CIMEL ON THE
ROOF OF
METEOROLOGY
CENTER
TAMANRASSET





The AOD is minimum in winter period and very high in summer period

CONSEQUENCES OF SAND ON ECONOMIC ACTIVITIES

Cancellation of Flights in South Region

The occurrence of Sand Wind or Haze causes the major cancellation of aircraft in south part of Algeria because of reduces of visibility

At Tamanrasset , rocky region of Hoggar , the flights are cancelled when the visibility is reduced by Haze less or equal than 3 km ($VV \leq 3 \text{ km}$)

Some critical situations of Haze :

July 2011 : from 10 to 19 , visibility is reduced less than 5 km

From 26 june to 05 july 2010 : 10 days of strong Haze , a lot of flights cancelled , people can't travel .

Problem of Health

At city of Tamanrasset , in summer period when the Haze are very frequent there is a lot of situation of Asthmatic (difficult of breathing)

Impact of Sand on Saharian Trees

