

# AEROCOM

## Global Aerosol Model Intercomparison

[Home](#) + [Meetings](#)

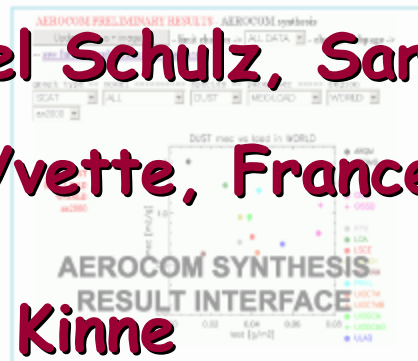
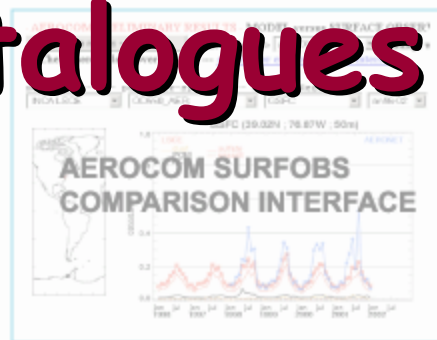
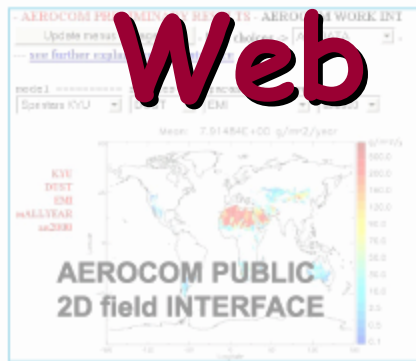
[Protocol](#)

DATA AND RESULTS

# The AeroCom

Model data and Observational data have been processed and are available as images and comparison plots. Go to web interfaces here:

# Web catalogues



**Christiane Textor, Michael Schulz, Sarah Guibert**

**LSCE, Gif sur Yvette, France**

**Stefan Kinne**

**MPI Met, Hamburg, Germany**

(the interfaces are partly password protected, [contact for help](#))  
see also [tutorial presented at ACP](#) and [http://aerocom.org](#)

[AEROCOM Workshop presentations \(Paris June 2003\)](#)

[References and Links](#)

[Data](#)

# AEROCOM

## Global Aerosol Model Intercomparison

[Home](#) + [Meetings](#)

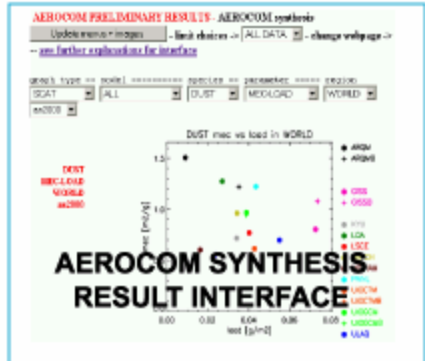
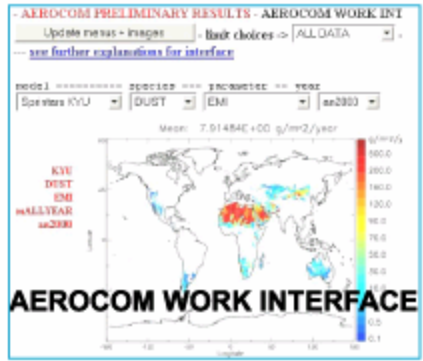
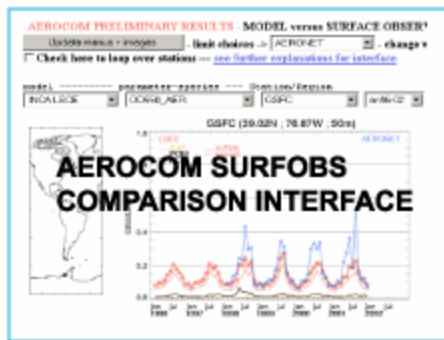
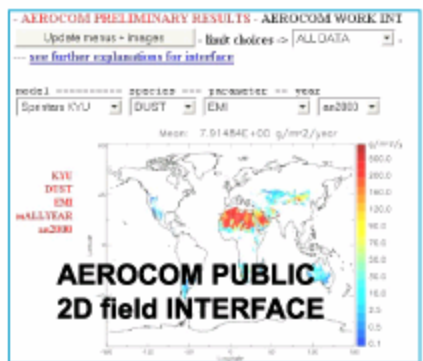
### DATA AND RESULTS

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[Protocol](#)

[References and Links](#)

[Data](#)



(the interfaces are partly password protected, [contact for help](#))  
see also ["Tutorial" presented at AGU](#) and help on interfaces

[AEROCOM Workshop presentations \(Paris June 2003\)](#)

# Objective of the AeroCom web catalogues

- Communication platform for aerosol community
- Dokumentation of the state of the art
- Presentation of results from AeroCom models
- Compilation of a multitude of data
- Model analysis and validation
  - Model-data comparison
  - Model-model comparison
  - Model analysis, synthesis of results

# AeroCom Surfobs/Lidar Web Interfaces

4th AeroCom workshop, Oslo, June 15-17, 2005

# SURFOBS web interface

<http://nansen.ipsl.jussieu.fr/AEROCOM/DATA/surfobs.html>

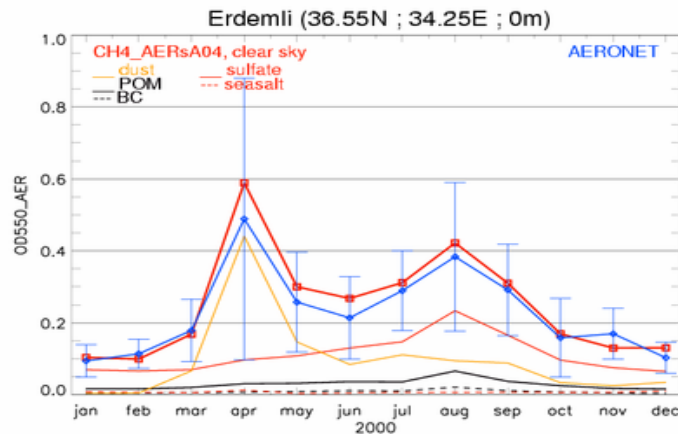
## - AEROCOM PRELIMINARY RESULTS - MODEL versus SURFACE OBSERVATIONS

UPDATE - limit choices -> **ALL DATA** - change webpage -> **presently on nansen surfobs interface**

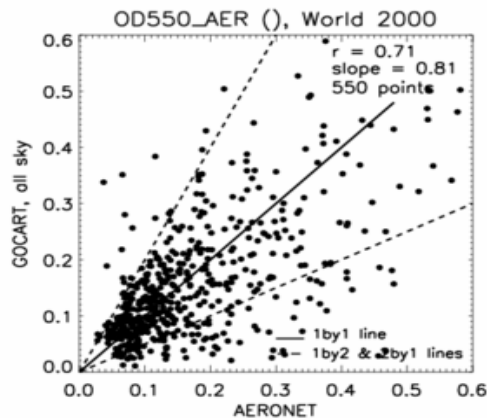
-> [see info](#) -> [Explicit One image Interface](#) - performance? -> **menus & images updated after selection change (slower but little failure)**

menus: graph type ---- data source ---- species ---- parameter ---- station ---- year ---- period

**SERIES** | **IIICA LSCE** | **AER** | **OD550**  
**Erdemli** | **an2000** | **mALLYEAR**

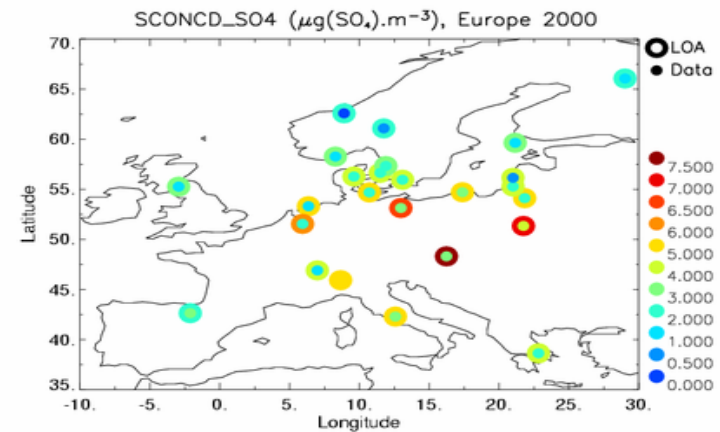


**SCAT** | **GOCART** | **AER** | **OD550**  
**WORLD** | **an2000** | **mALLYEAR**

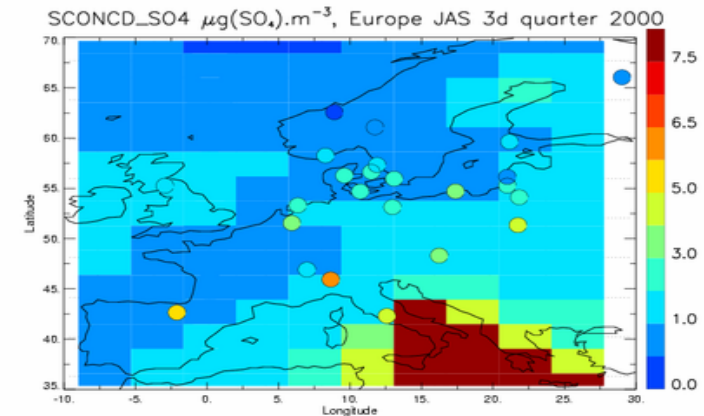


menus: graph type ---- data source ---- species ---- parameter ---- station ---- year ---- period

**MAP** | **LOA Lille ExpA** | **S04** | **SCONCD**  
**Europe** | **an2000** | **mALLYEAR**



**FIELDCOMPA** | **LOA Lille ExpB** | **S04** | **SCONCD**  
**Europe** | **an2000** | **mJAS**



# Types of graph producted

## Species - Parameter

AER  
SO4  
BC  
OC  
DUST

Monthly or  
daily data

Use of 3D  
or surface  
conc

OD550 (D)  
ANGSTROM (D)  
OD550LT1D  
EC550  
SCONCD  
CONC3D

Year/Month/Season

Station / Region

Type

SERIES  
MAP  
SCAT (scatterplot)  
FIELDCOMPA

# Post-processing of model output

## Horizontal interpolation :

Model output interpolated to stations locations

## Daily filtration :

Daily data => Model data filtering according to observations

If at least 8 days in a month with data

=> Monthly mean (use for timeseries and scatterplots)

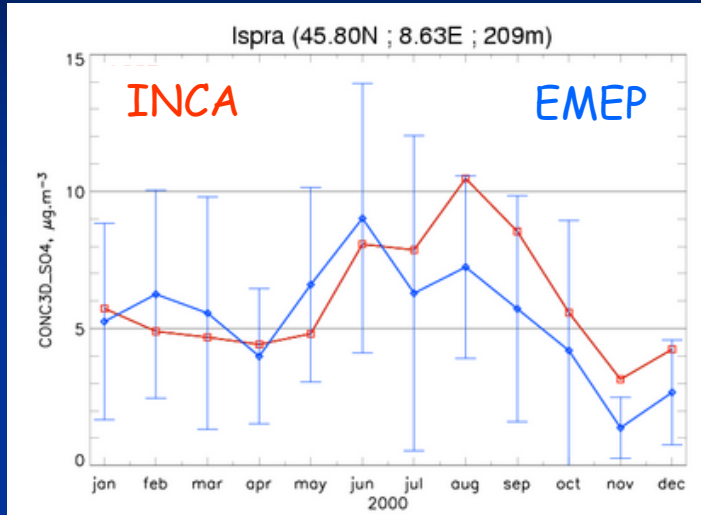
If at least 3 months in a year with data

=> Yearly mean (use for Map and Fieldcompa)

## Rejection of mountain sites for surface comparison

# Features (1)

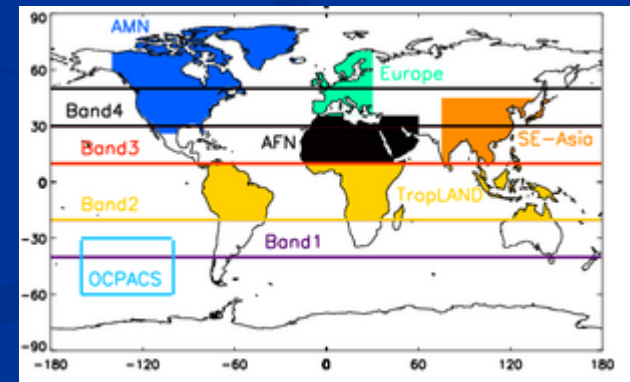
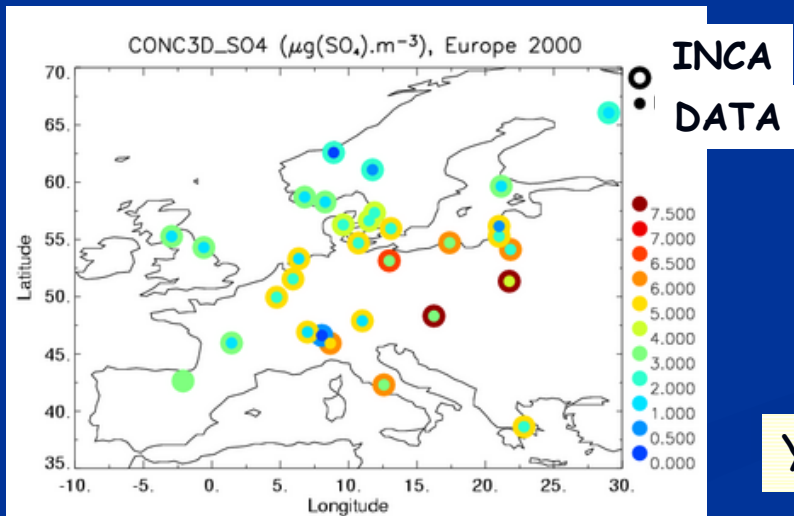
## SERIES : time series at each station



SCONCD : use of surface daily concentration  $\Rightarrow$  Daily filtration + no mountain sites

CONC3D : use of 3D monthly concentration  $\Rightarrow$  interpolation of modeled data to the grid box containing the altitude of the station

## MAP : comparison model/obs at each station

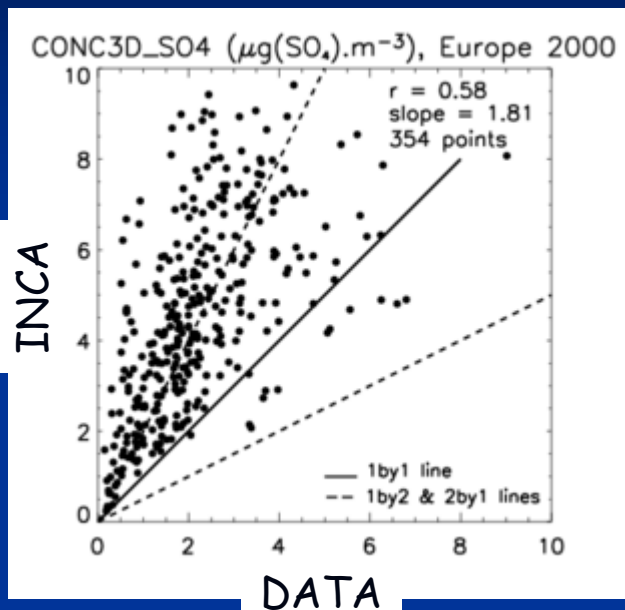


Yearly mean values



# Features (2)

SCAT : scatterplot between model and obs



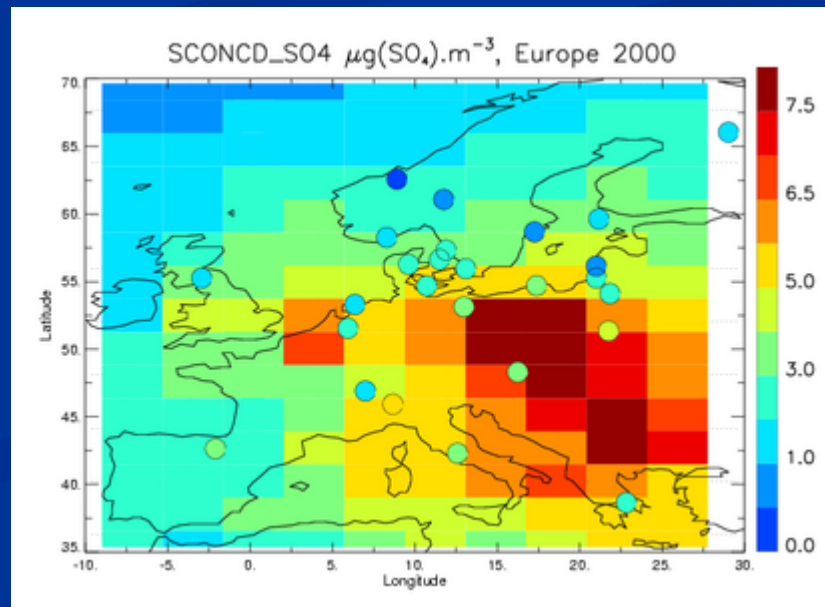
Use of the monthly mean values at each station

FIELDCOMPA: FIELD + superposition of obs value at each station

Yearly mean value

Model output + data at surface

Exists for each month + seasonal average



# Basics principles for interfaces

Standard categories used for any image :  
**[GRAPHTYPE]\_SPECIES\_[PARAMETER]\_[REGION]\_an[YEAR]\_[PERIOD]**

Choice of each « category » to see the corresponding graph

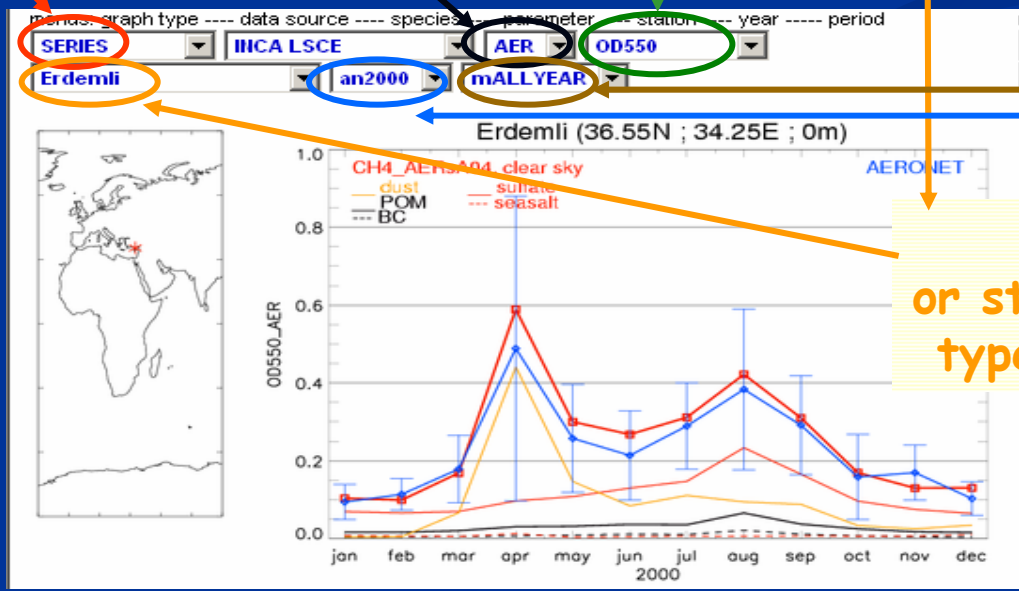
**SERIES**  
**MAP**  
**SCAT**  
**FIELD**  
**COMPA**

**AER**  
**SO4**  
**etc...**

**OD550**  
**SCONCD**  
**etc...**

**2000**  
**2001**  
**9999**

**mALLYEAR**  
 or each month :  
 m01, m02, ....., m12  
 or seasonal period :  
 mJFM, mJAS, ...



**Regions**  
 or stations when  
 type = SERIES

# SYNTHESIS web interface

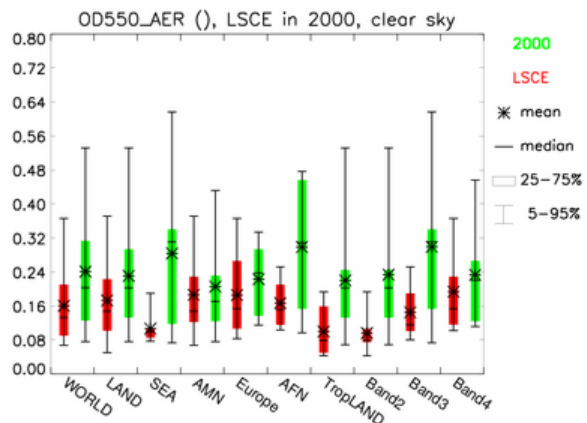
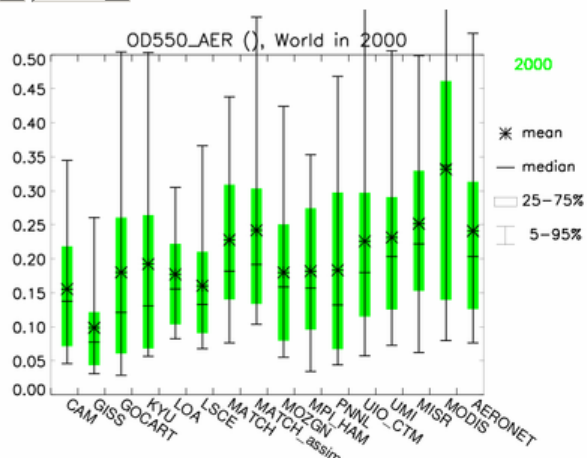
<http://nansen.ipsl.jussieu.fr/AEROCOM/DATA/synthesis.html>

- AEROCOM PRELIMINARY RESULTS - AEROCOM synthesis

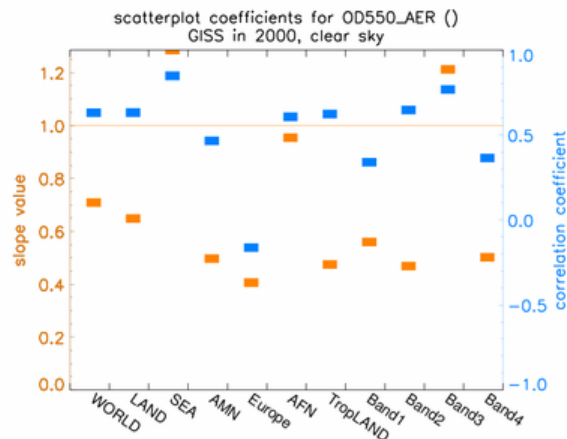
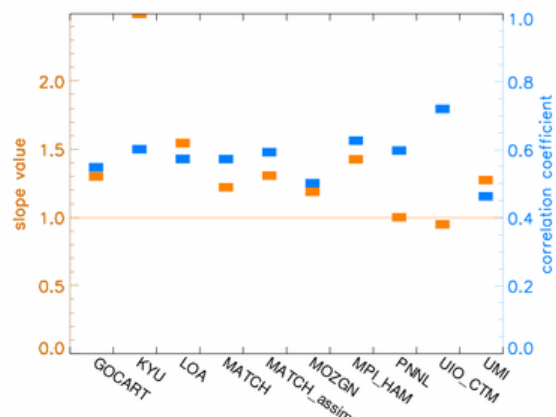
UPDATE - change webpage ->

-> [see info](#) -> [Explicit One image Interface](#) - performance? ->

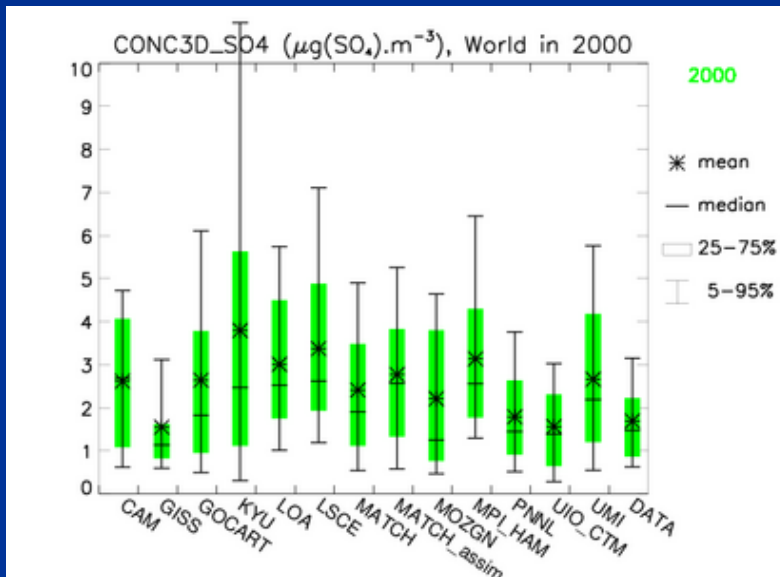
graph type ---- data source ---- species -- parameter ----- region



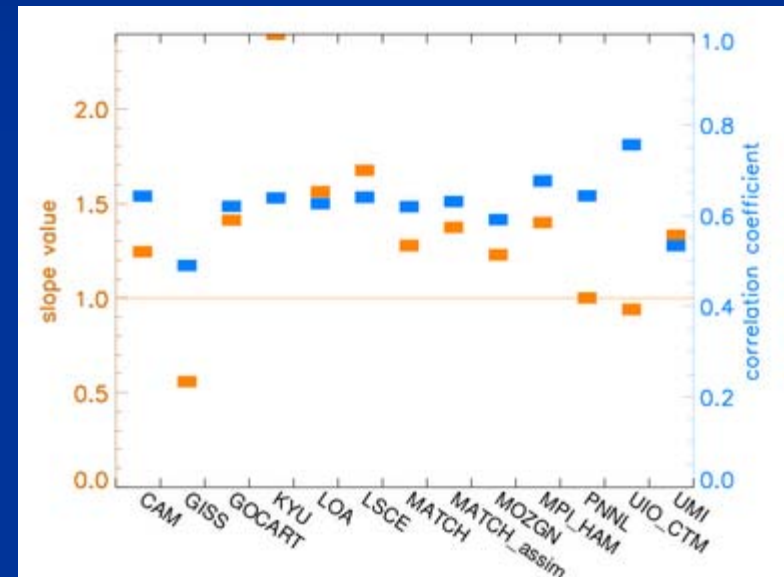
graph type ---- data source ---- species -- parameter ----- region



# Features



**SURFOBS** : comparison of mean model/data values



**SCATCOEF** : comparison of slope and regression coef

# Basics principles for interfaces

Standard categories used for any image :

[GRAPHTYPE]\_SPECIES\_[PARAMETER]\_[REGION]\_an[YEAR]

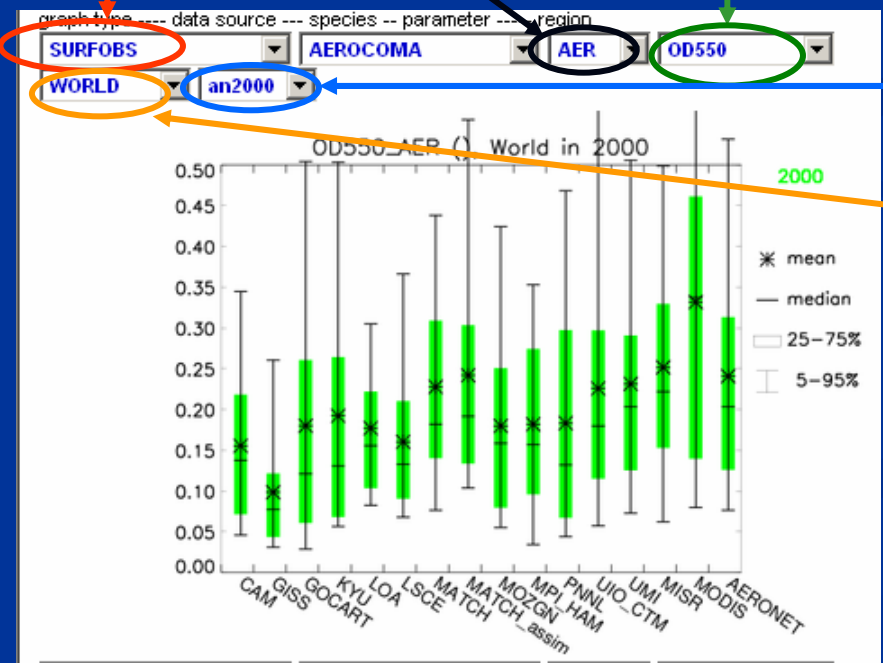
Choice of each « category » to see the corresponding graph

SURFOBS  
SCATCOEF

AER  
SO4  
etc...

OD550  
SCONCD  
etc...

2000  
2001  
9999



Regions  
or ALLREGIONS  
when model and not  
AEROCOMA or B

# LIDAR web interface

<http://nansen.ipsl.jussieu.fr/AEROCOM/DATA/lidar.html>

MODEL versus LIDAR OBSERVATIONS

UPDATE - limit choices -> ALL DATA - change webpage -> presently on nansen lidar interface

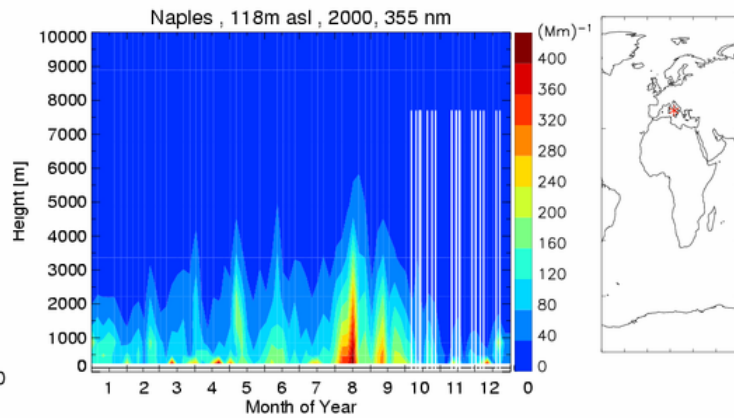
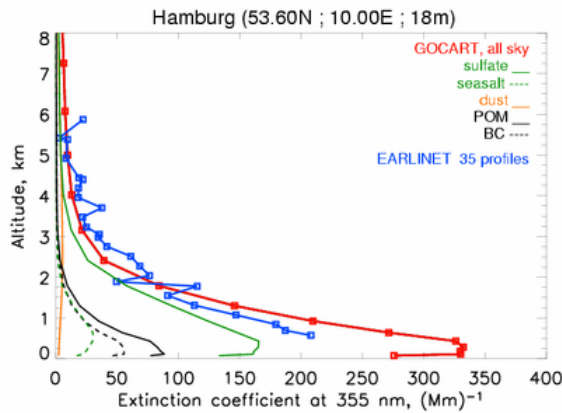
-> see info -> Explicit One image Interface - performance? -> menus & images updated after selection change (slower but little failure)

menus: graph type ---- data source ---- species ---- parameter ---- station ---- year ---- period

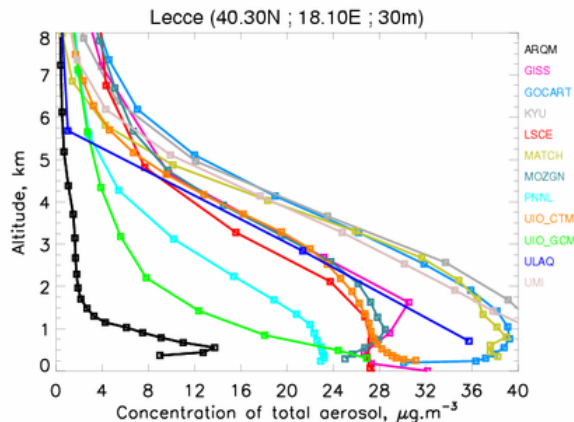
PROFILE GOCART AER EC355  
Hamburg an2000 mALLYEAR

menus: graph type ---- data source ---- species ---- parameter ---- station ---- year ---- period

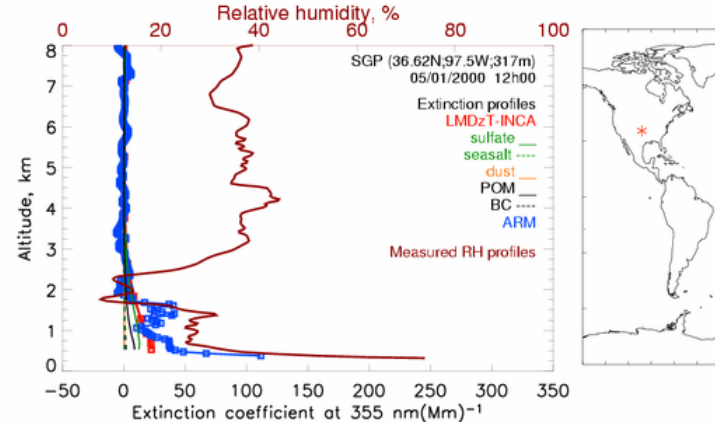
SLICE IIICA LSCE AER EC355  
Naples an2000 mALLYEAR



PROFILE AEROCOMA AER COIC  
Lecce an2000 mALLYEAR



PROFILE IIICA LSCE AER EC355  
SouthGreatPlains an2000 m01d05m



# Types of graph producted

## Species - Parameter

AER  
SO4  
BC  
POM  
DUST

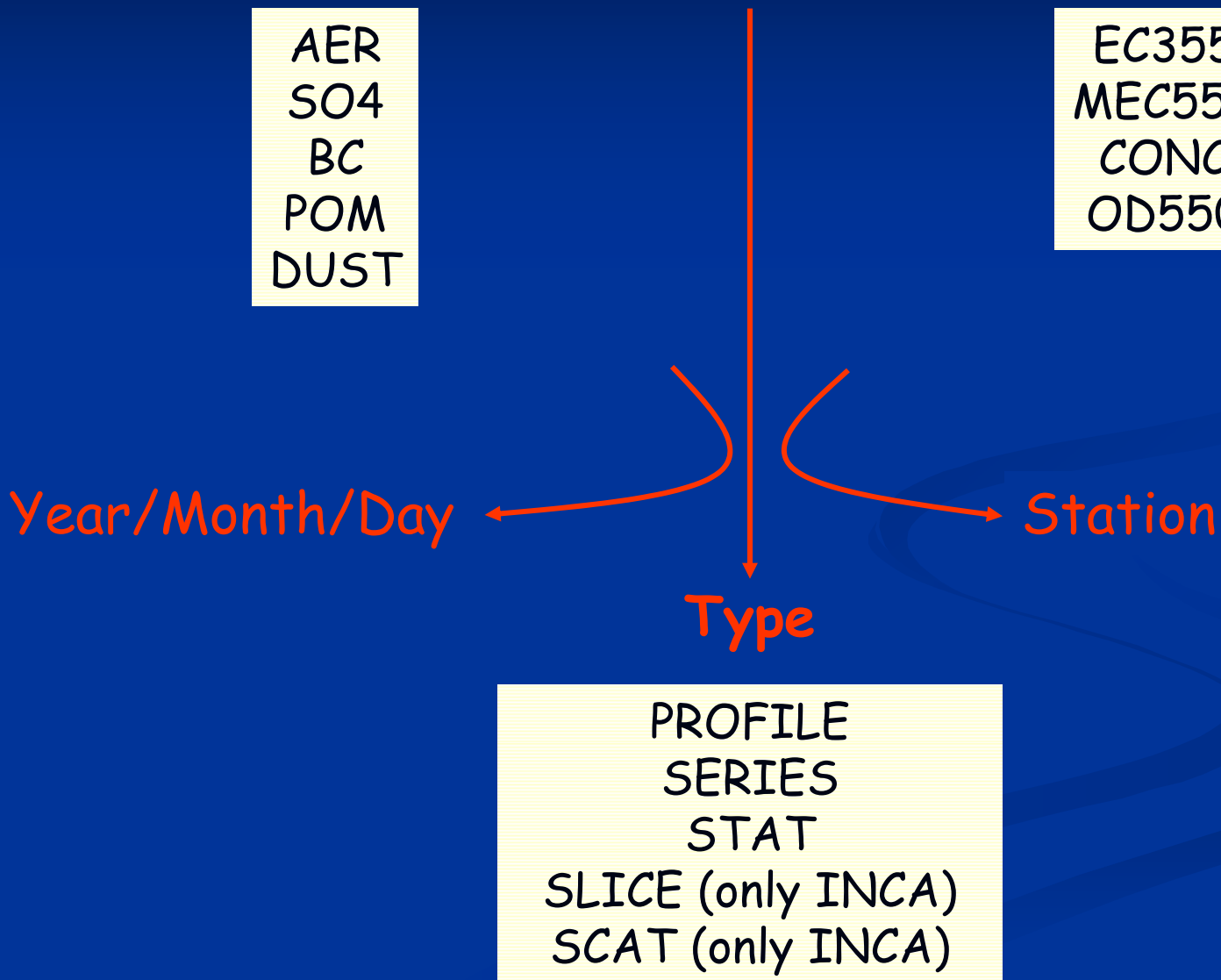
EC355  
MEC550  
CONC  
OD550

Year/Month/Day

Station

Type

PROFILE  
SERIES  
STAT  
SLICE (only INCA)  
SCAT (only INCA)



# Basics principles for interfaces

Standard categories used for any image :

[**GRAPHTYPE**]**\_**[**SPECIES**]**\_**[**PARAMETER**]**\_**[**REGION**]**\_**an[**YEAR**]**\_**[**PERIOD**]

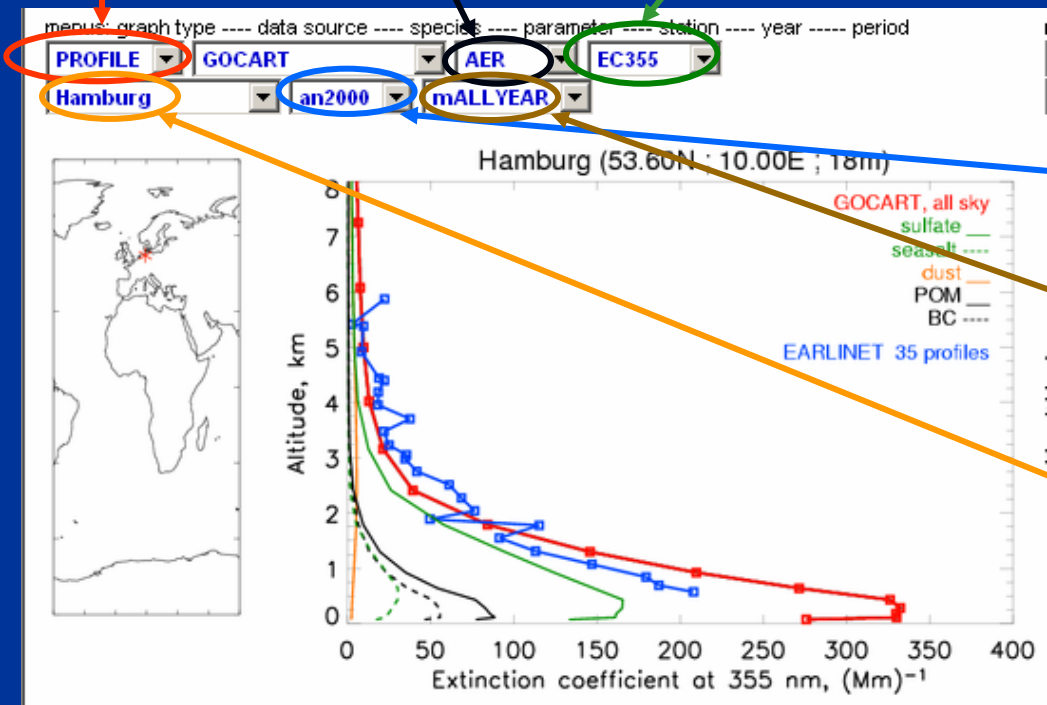
Choice of each « category » to see the corresponding graph

**PROFILE**  
**STAT**  
etc.....

**AER**  
**SO4**  
etc...

**OD550**  
**SCONCD**  
etc...

**2000**  
**2001**  
**9999**



**mALLYEAR**  
or each month (m01,...)  
or each day (m01d05,...)

**Stations**



# The AEROCOM WORK INTERFACE

→ 2d fields, budgets and averages

AEROCOM Aerosol Model Comparison WORK INTERFACE - Microsoft Internet Explorer

Zurück Adresse [http://nansen.ipsl.jussieu.fr/cgi-bin/AEROCOM/aerocom\\_work/aerocom](http://nansen.ipsl.jussieu.fr/cgi-bin/AEROCOM/aerocom_work/aerocom) Datei Bearbeiten Ansicht Favo

- AEROCOM PRELIMINARY RESULTS - AEROCOM WORK INTERFACE -

UPDATE - limit choices -> ALL DATA - change webpage -> presently on nansen aerocom\_work interface

-> see info -> [Explicit One image Interface](#) - performance? -> menus & images updated after selection change (slower but little failure)

data source ---- species --- parameter -- year

LOA Lille ExpA POM LOADD

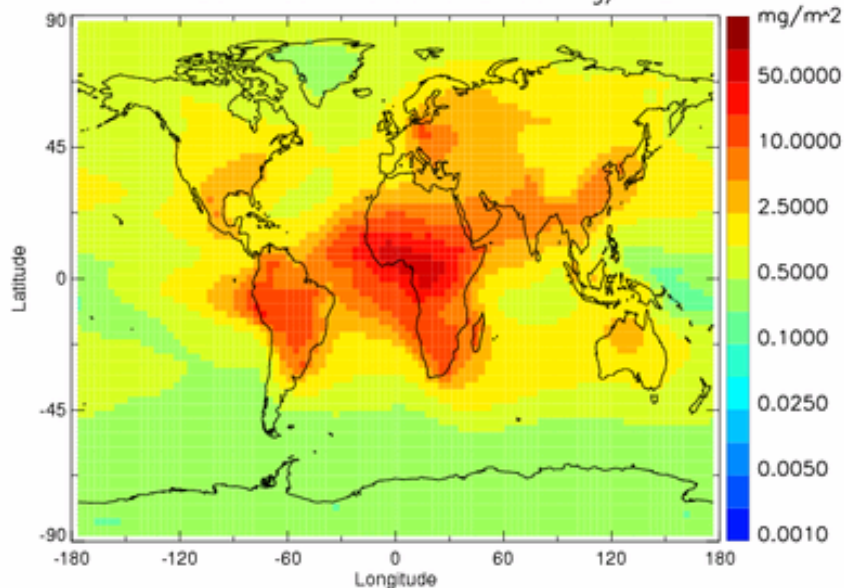
an2000

data source ---- species --- parameter -- year

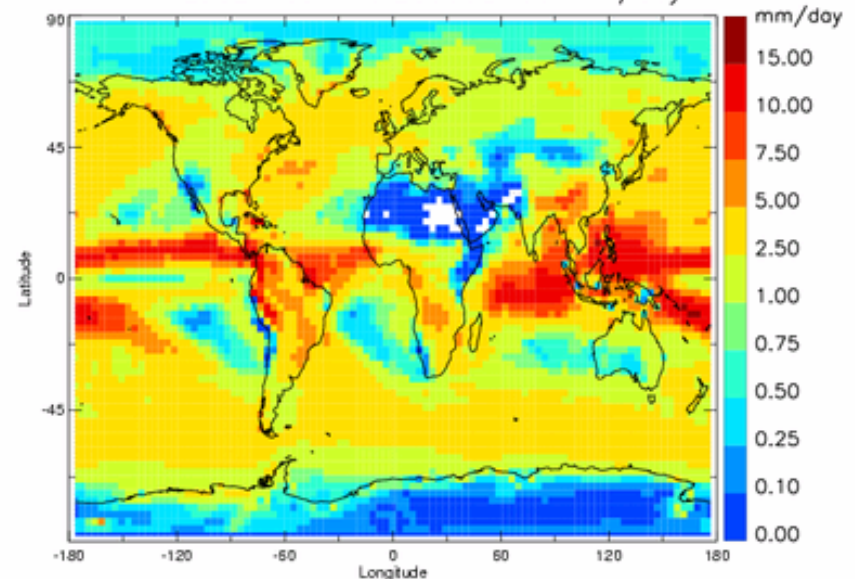
INCA LSCE METEO PREC

an2000

LOA Mean: 3.53494E+00 mg/m<sup>2</sup>

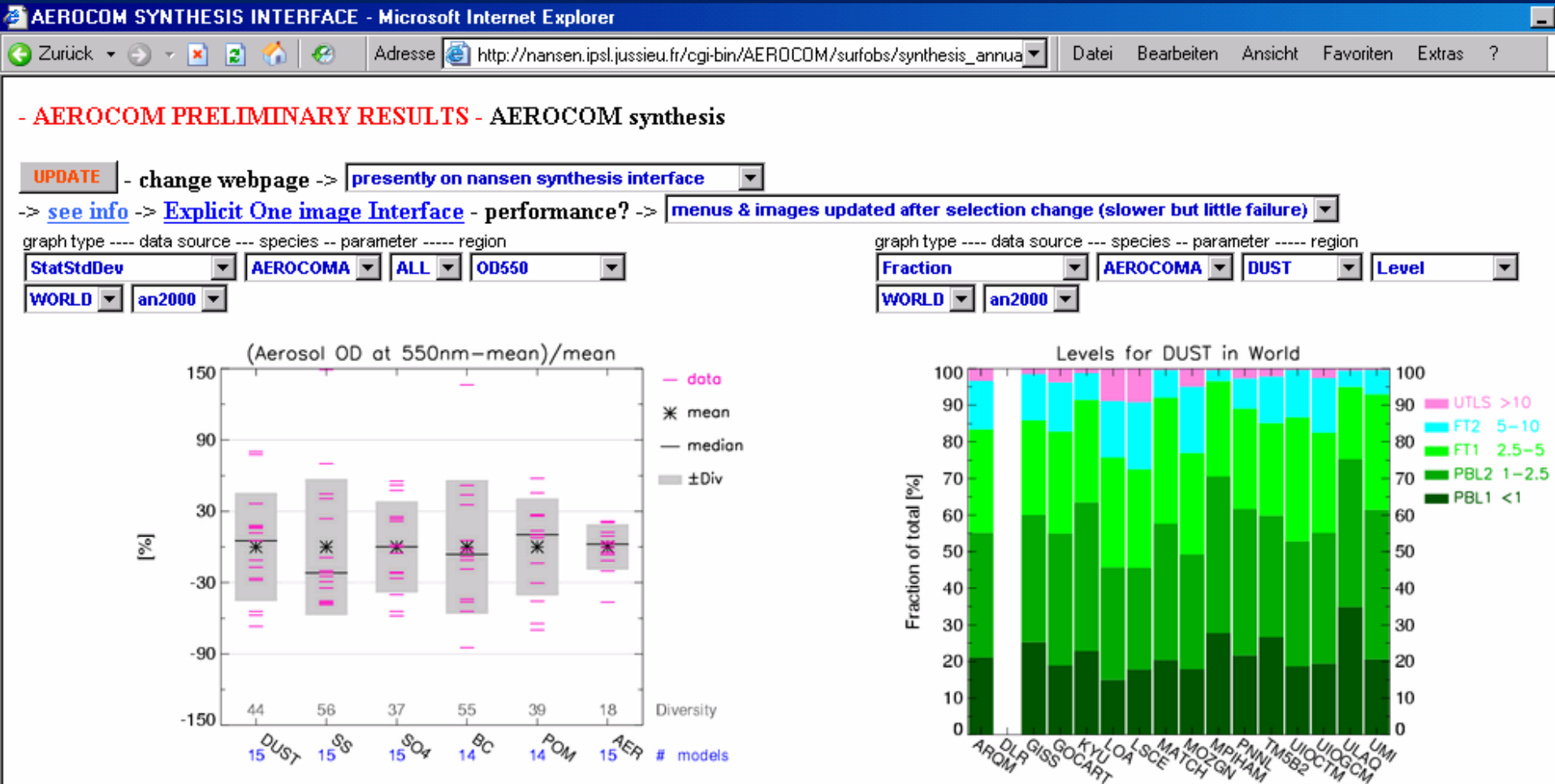


LSCE Mean: 3.20350E+00 mm/day



# The AEROCOM SYNTHESIS web site

→ ongoing analysis of model results



Plot type - Experiment/Model- Species- Parameter - Year

Not all combinations work: always update (twice)!

### - AEROCOM PRELIMINARY RESULTS - AEROCOM synthesis

Choose from menus parameter combination for next image & press update button --

Or go to -> [4-image interface with abbrev. Menus](#) or

- change webpage -> **presently on nansen synthesis interface**

- performance? -> **menus & images updated after selection change (slower but little failure)**

Type of Graph  
**Fraction = global annual average mass fraction value for models**

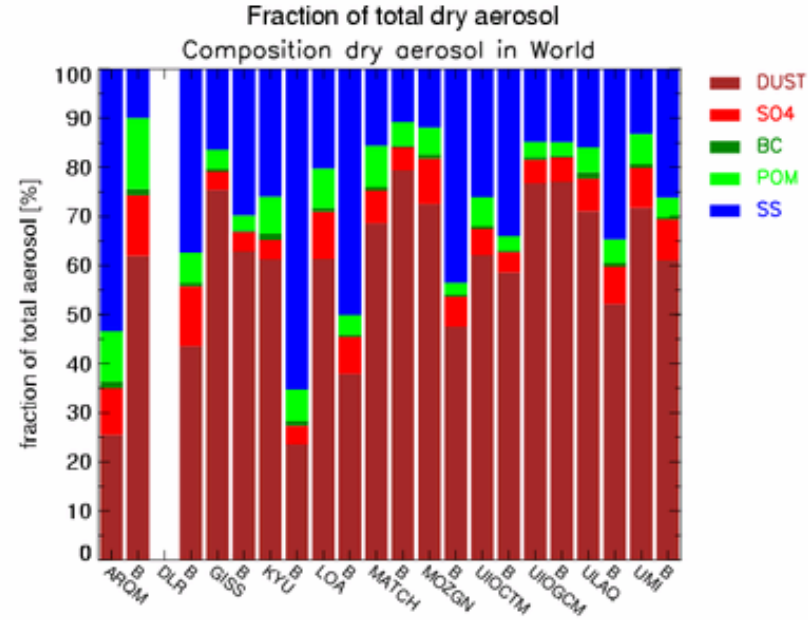
Data Source ->  
**EXPAB = synthesis graphs for models which have both Exp A and Exp B**

Species ->  
**AER = Total dry Aerosol**

Parameter ->  
**Comp = Composition: global annual mass fraction of species / total mass**

Region -- Year ->  
**WORLD** **an2000**

**Click to Update menus + images**



# Plot types

DIFF

CORR

Fraction

MAP

Mean

Merid

SCAT

SCATCOEFF

StatRange

StatStdDev

SURFOBS

TAYLOR

Timeseries

Explanations at the bottom of the synthesis web site

## Explanations -

(functionality of this interface is tested in Mozilla Firefox) INFO >> [Functionality of interface](#)

INFO >> [See AEROCOM protocol](#)

INFO >> [See general information on contributing authors](#)

Explanation on Abbreviations used above in menus:

**TAYLOR = taylor plots**

**Merid = meridional and annual average value for models**

**SCAT = Scatter plot model output versus observations, monthly averages or values as in SERIES**

**SCATCOEF = synthesis of regression and slope values from scatterplots for the different models**

**StatRange = Statistics of model results: absolute value for all species with percentiles**

**StatStdDev = Statistics of model results: Model diversity (normalized standard deviation from all-models-average)**

**SURFOBS = Surface observation and models with statistics (percentiles)**

**TAYLOR = taylor plots**

**TAYLOR\_ZONAL = taylor plots of the zonal component**

**TAYLOR\_ZON\_ANOM = taylor plots of the zonal anomaly component**

**Timeseries = time series of a parameter for all species (only for INCA at the moment)**

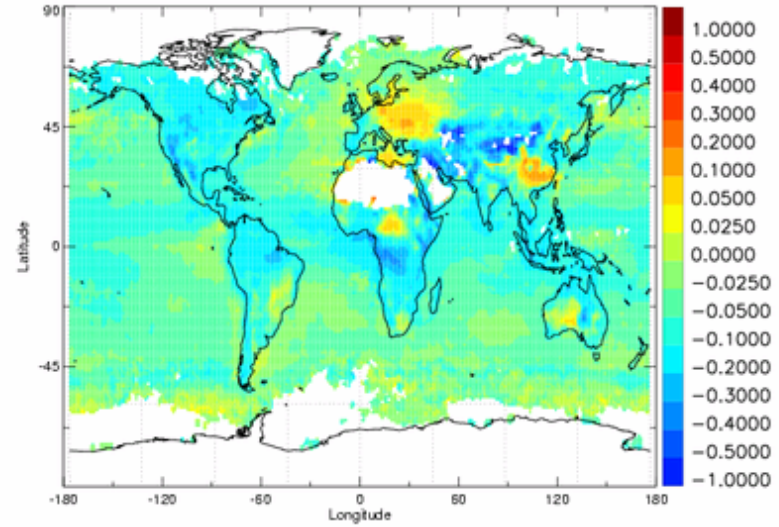
**Zonal = zonal and annual average value for models**

DIFF AEROCOM-MEAN AER

OD550-MODIS2000

WORLD an2000

DIFF AEROCOM-MEAN-MODIS/2000/ALLYEAR AOD RMS= 0.088

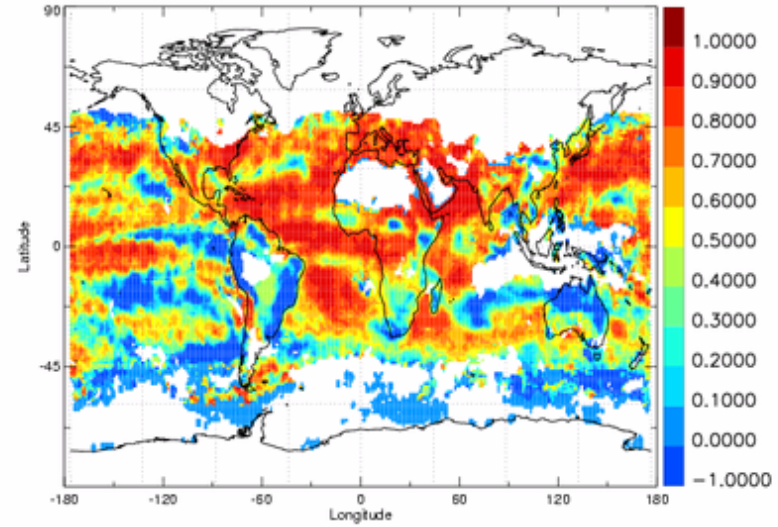


CORR AEROCOM-MEAN AER

OD550-POLDER1997

WORLD an2000

CORR AEROCOM-MEAN-MODIS/2000 AOD mean r= 0.501



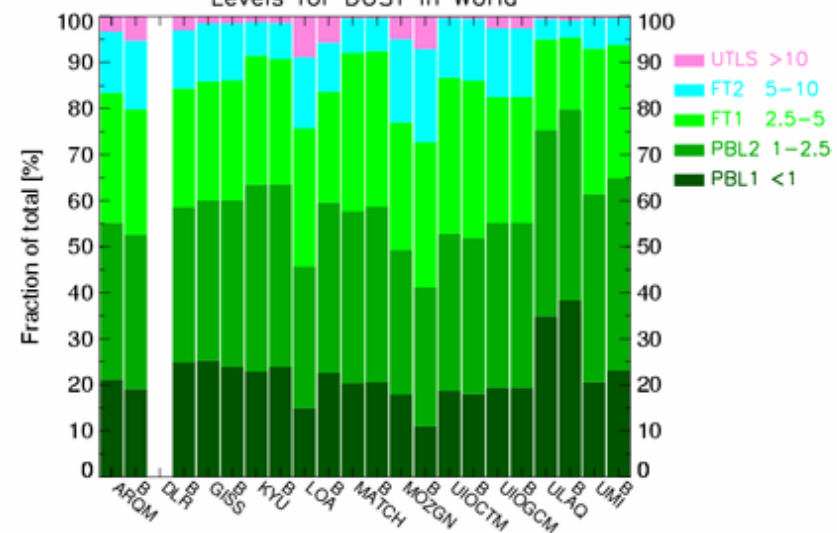
Fraction EXPAB DUST Level

WORLD an2000

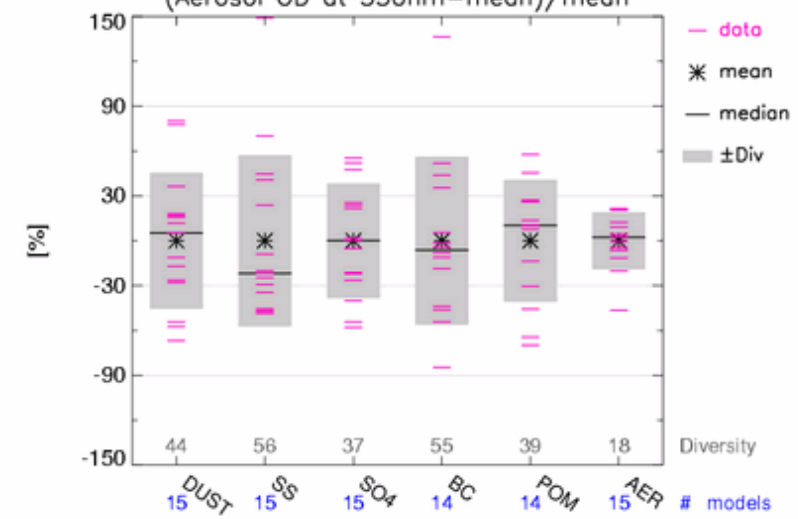
StatStdDev AEROCOMA ALL OD550

WORLD an2000

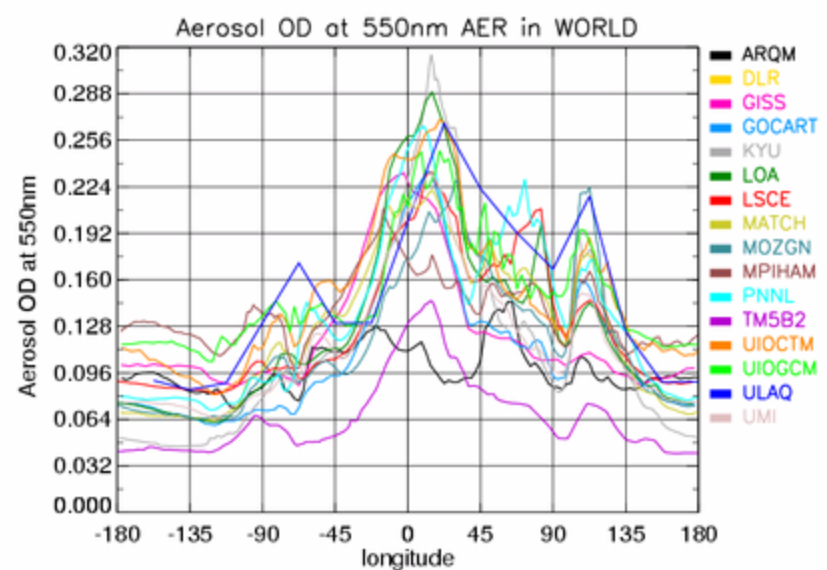
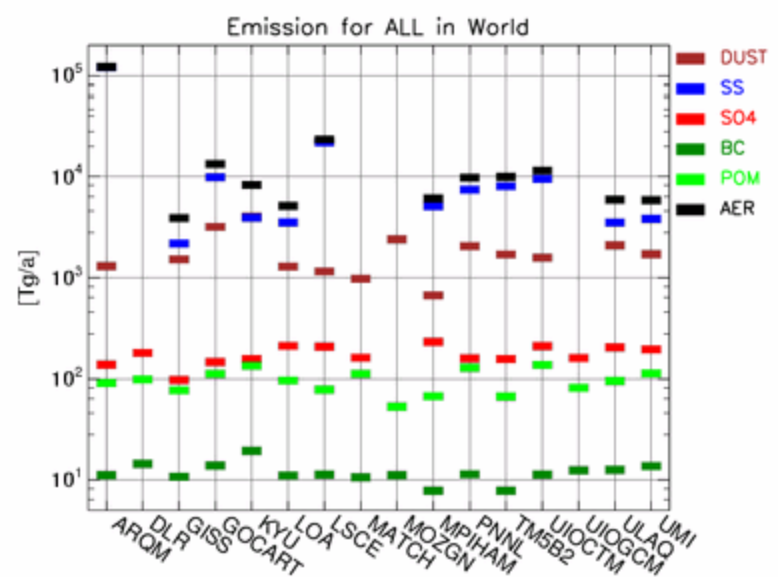
Levels for DUST in World



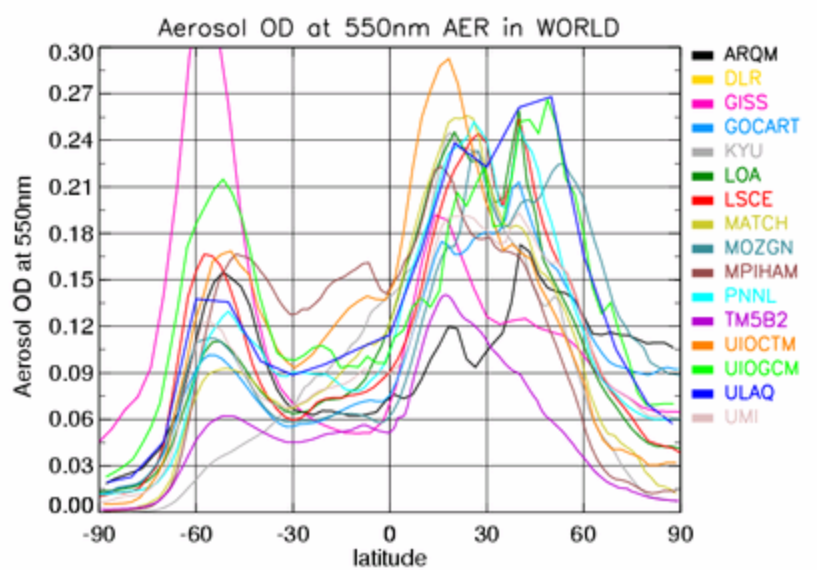
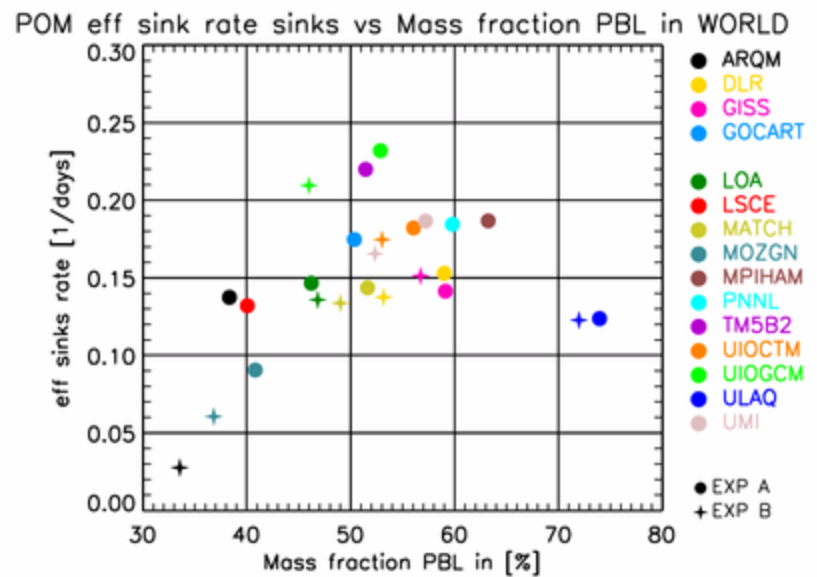
(Aerosol OD at 550nm-mean)/mean

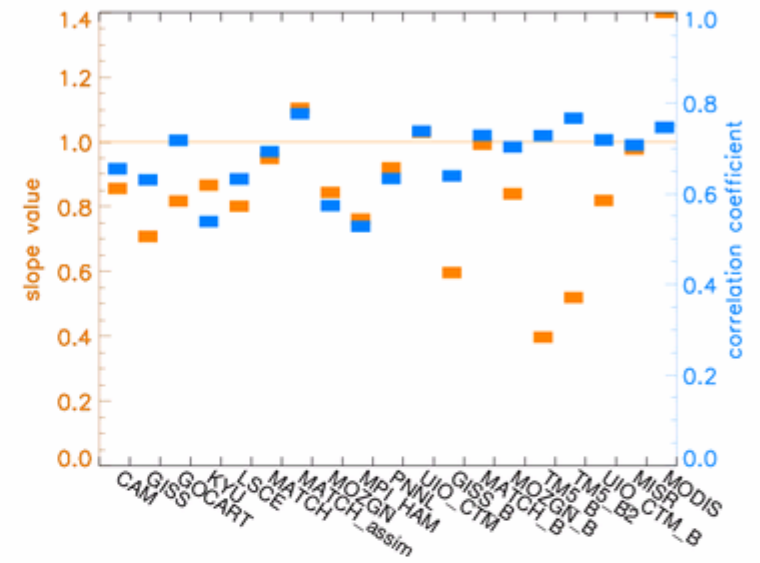
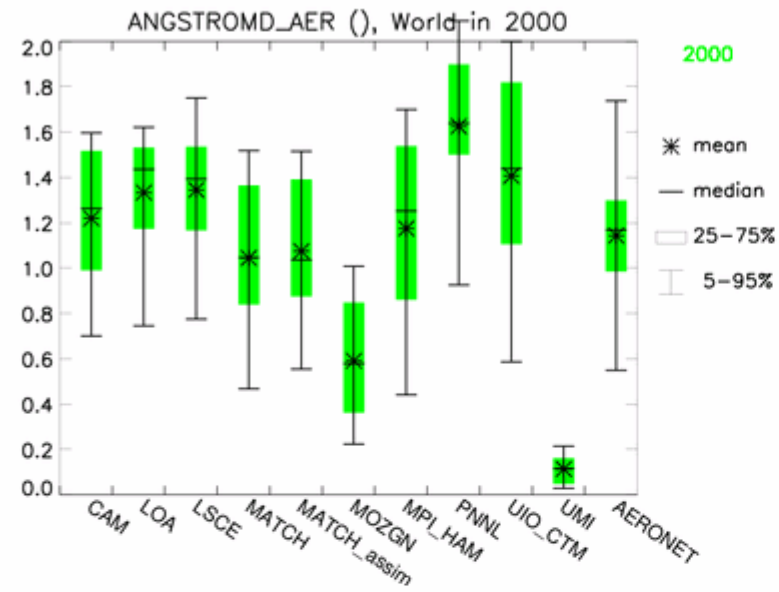


Mean

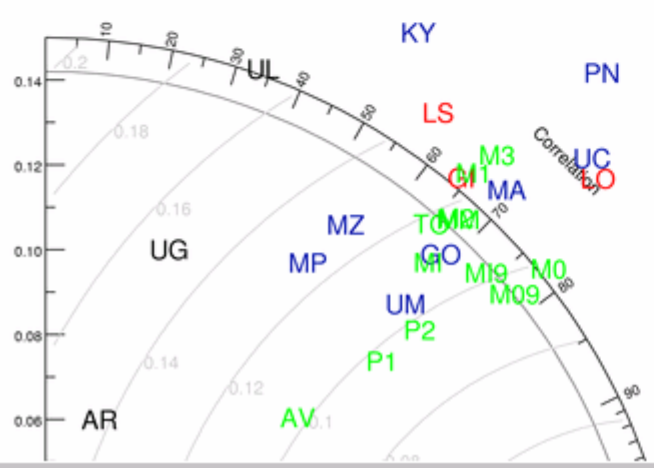


SCAT



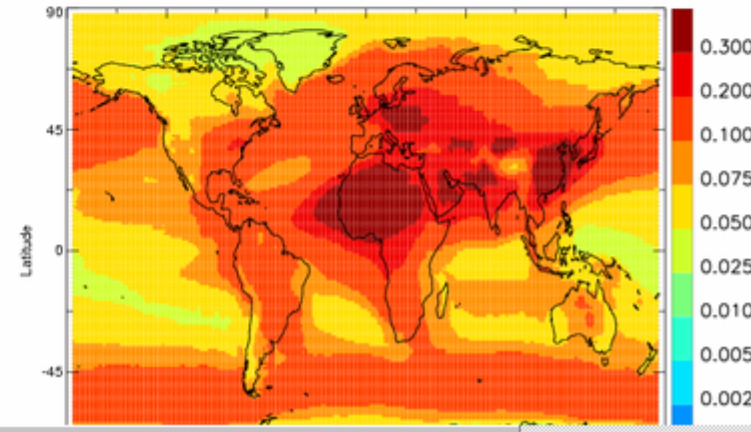


WORLD-ANET\_2000



- AN: ANET\_2000
- AR: ARQM\_9999
- AV: AVHRR\_9999
- GI: GISS\_2000
- GO: GOCART\_2000
- KY: KYU\_2000
- LO: LOA\_2000
- LS: LSCE\_2000
- MA: MATCH\_2000
- MI: MISR\_2000
- M0: MODIS\_2000
- M1: MODIS\_2001
- M2: MODIS\_2002
- M3: MODIS\_2003
- M09: MODIS\_9999
- MM: MODMIS\_2000
- MZ: MOZGN\_2000
- MP: MPI\_HAM\_2000

AEROCOM-MEAN-2000 AOD mean = 0.124



# Topics to discuss

- Suggestions ?
- Public area / Password protection ?
- AeroCom products on-line ?
  - emissions
  - AeroCom median fields
  - Aerosol climatology...
- Feedback please !!