1. GENERALITIES

Parameters available for comparison

- **Optical properties**

OD550_AER

OD550D_AER (daily)

OD550LT1D_AER (daily)

→ optical depth at 550 nm for each species fine mode (wet radius <1 um)

EC550_AER

ANGSTROMD_AER (daily)

ODMODIS / ODMODISD → compa model versus MODIS

- **Concentrations**

CONC3D_[SO4,BC,OC,SS,DUST]

SCONCD _[SO4,BC,OC,SS,DUST] (daily)

SCONC _[SO4,BC,OC,SS,DUST] (only for models without daily concentrations outputs)

Units of the comparisons

- Sulfate concentration in $\mu g(SO_4)/m^3$
- Organic carbon concentration in $\mu g(OC)/m^3$
- Black carbon concentration in $\mu gC/m^3$
- Extinction coefficient in $(Mm)^{-1}$

* Optical depth : clear sky or all sky

Types of graphs producted

Species - Parameter

AER
SO4
BC
OC
DUST
SS

Monthly or daily data → OD550 (D)
ANGSTROM (D)
OD550LT1D
EC550

Use of 3D or surface conc → SCONC(D)
CONC3D

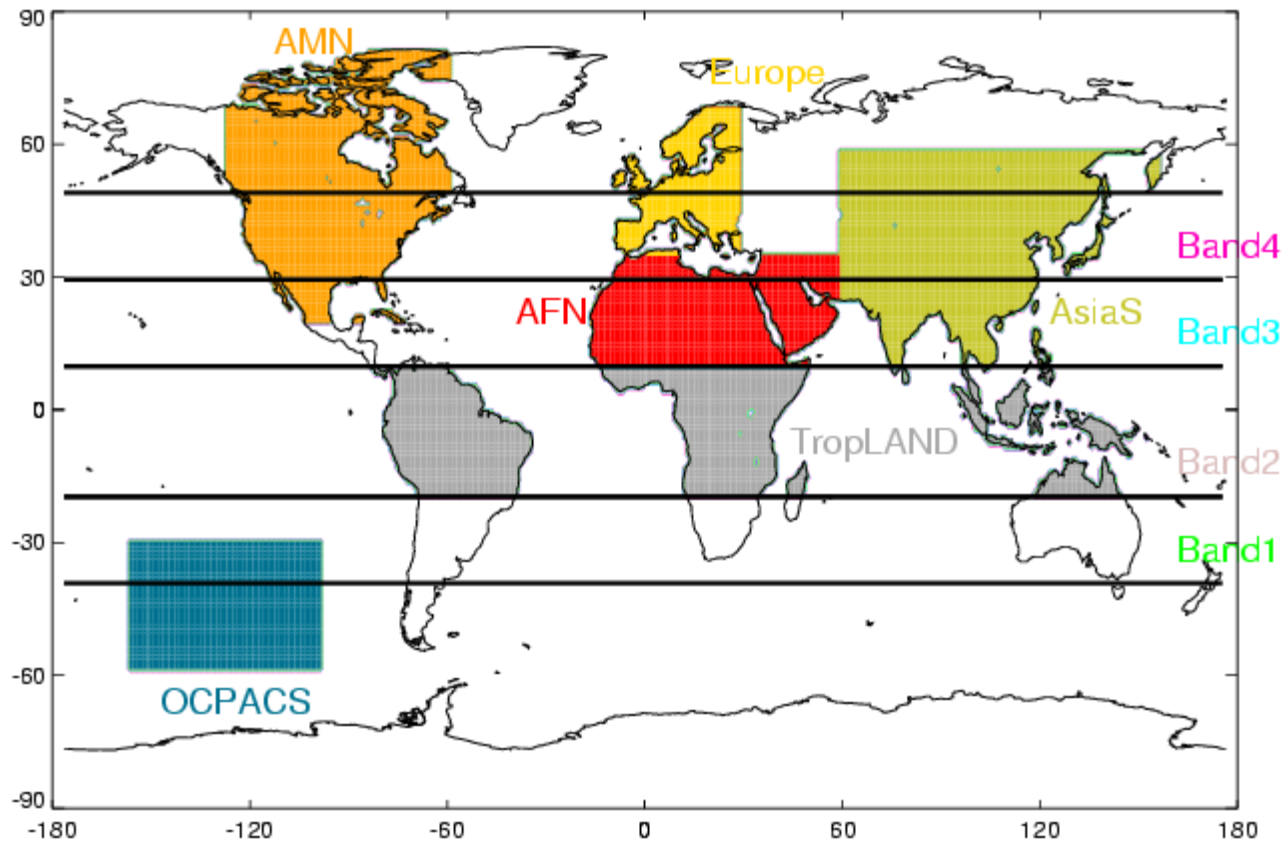Year/Month/Season

Type

Station / Region

SERIES
MAP
SCAT (scatterplot)
FIELDCOMPA

+ synthesis graphs
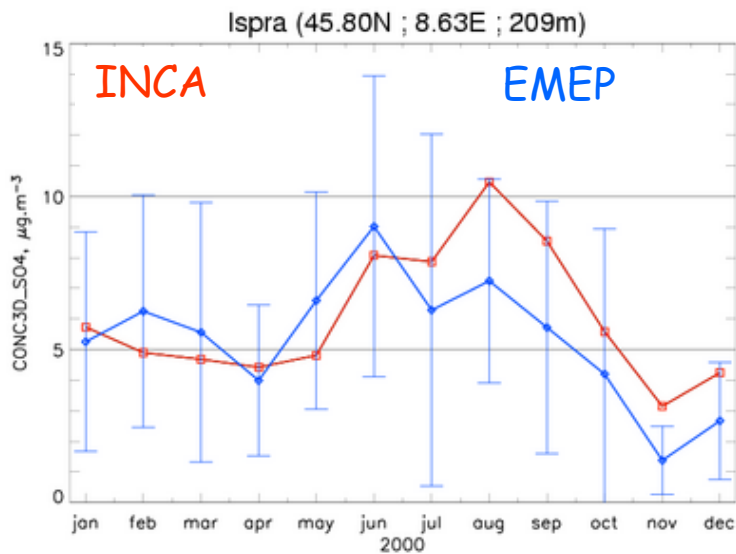STAT
SCATCOEF

*All graphs exist for WORLD + each region

Definition of regions

WORLD, LAND, SEA, AFN, AMN, Europe, TropLAND, AsiaS, Band1, Band2, Band3, Band4,OCPACS

SERIES : time series model/obs at each station

SCONCD :
use of surface daily concentration
=> Daily filtration
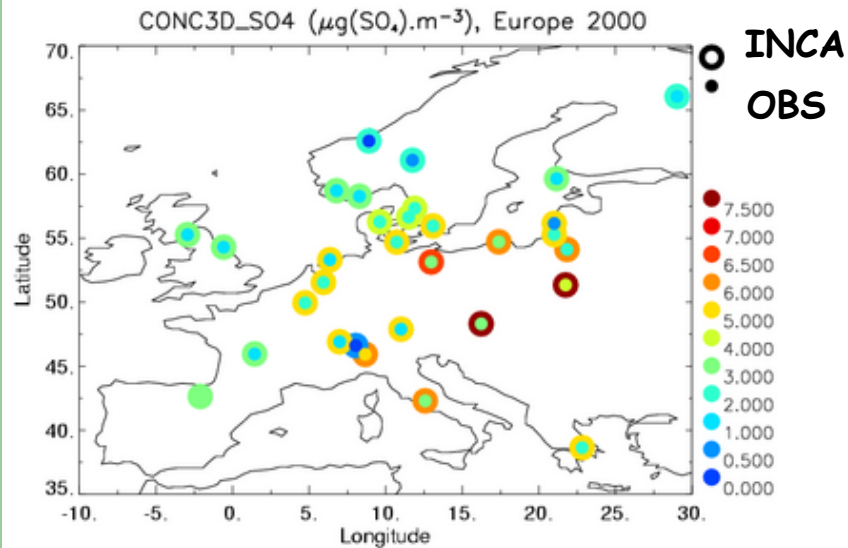+ no mountain sites

CONC3D :
use of 3D monthly concentration
=> interpolation of modeled data to
the grid box containing the altitude of
the station

NAME =
${PARAM}_${SPECIES}_an${year}_mALLYEAR_${station}_SERIES.ps.png

Plots (2)

MAP : comparison model/obs at each station

CONC3D_SO4 ($\mu g(SO_4).m^{-3}$), Europe 2000

INCA
OBS

7.500
7.000
6.500
6.000
5.000
4.000
3.000
2.000
1.000
0.500
0.000

Yearly mean values calculated at each station

Exists for each region

NAME =
${PARAM}_${SPECIES} _an${year}_mALLYEAR_${region}_MAP.ps.png

Plots (3)

SCAT : scatterplot model versus obs

CONC3D_SO4 ($\mu g(SO_4).m^{-3}$), Europe 2000

r = 0.58
slope = 1.81
354 points

INCA

1by1 line
1by2 & 2by1 lines

OBS
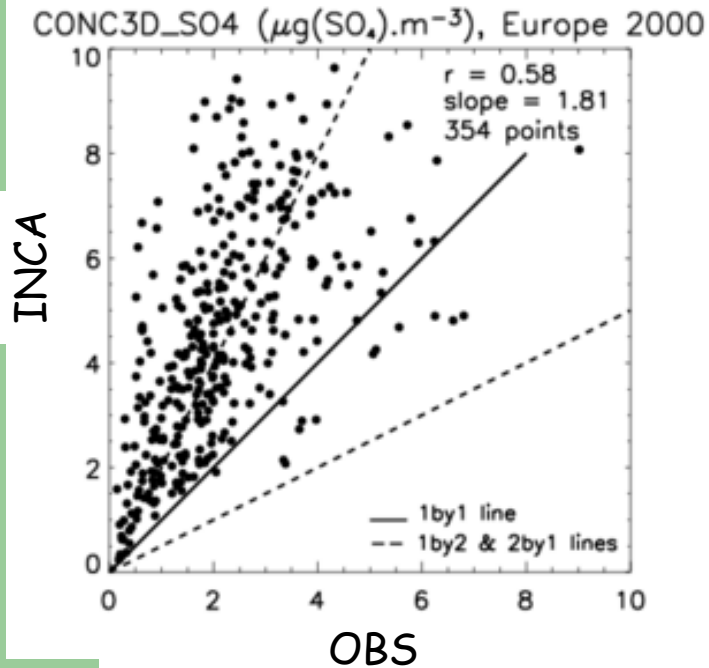
Use of the monthly mean values at each station

Exists for each region
+ synthesis of all regions slope
  on ALLREGIONS graph

NAME =
${PARAM}_${SPECIES} _an${year}_mALLYEAR_${region}_SCAT.ps.png

Plots (2)

FIELDCOMPA: 2DFIELD + superposition of obs value at each station

SCONCD_SO4 $\mu g(SO_4).m^{-3}$, Europe 2000
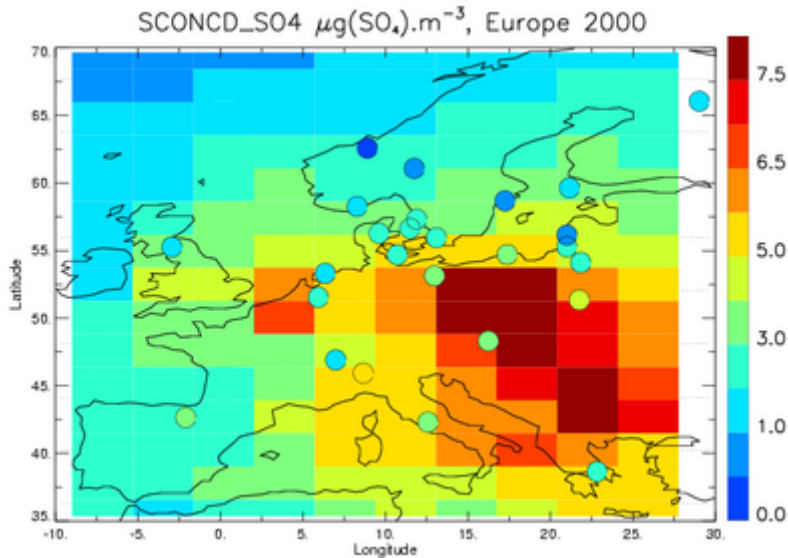
Model output + obs at surface

Yearly mean value or
Exists for each month + seasonal average

Exists for each region

NAME =
${PARAM}_${SPECIES} _an${year}_mALLYEAR_${region}_FIELDCOMPA.ps.png

Rules for the comparisons

1. Rejection of mountain sites for surface comparison

2. Model outputs interpolated to stations locations
horizontal + vertical for 3D comparisons

3. Daily filtration
Daily data => Model data filtering according to observations

4. Conditions for averaging
If at least 8 days in a month with data => Monthly mean
If at least 4 months in a year with data => Yearly mean
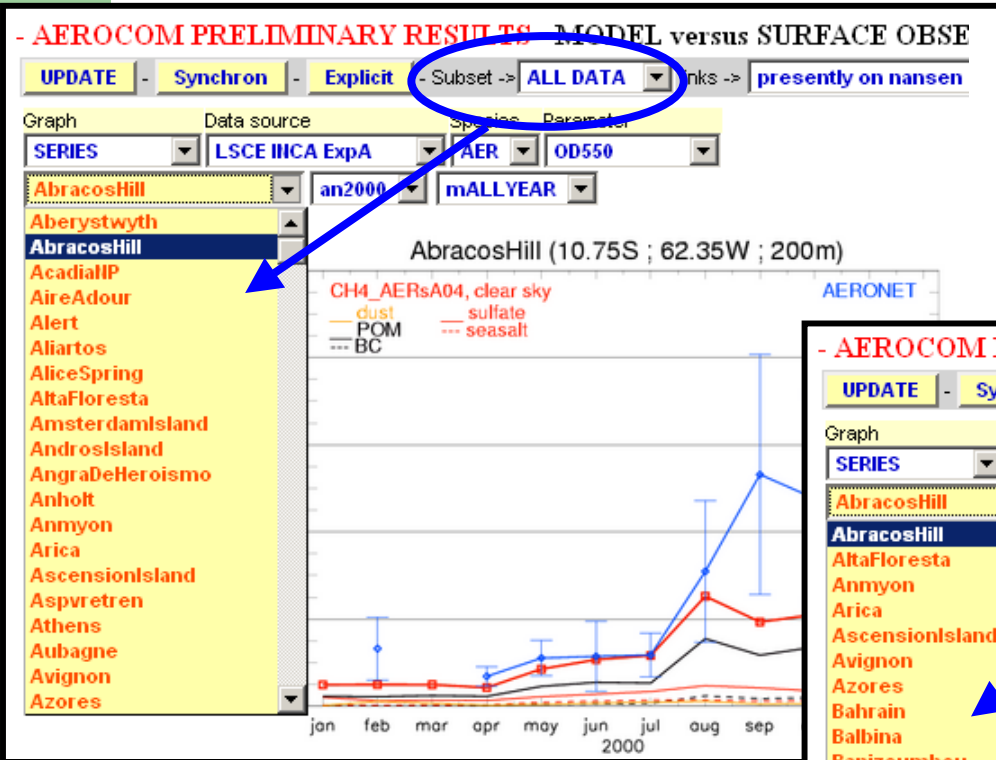
2. HOW TO SEE THE COMPARISONS ON WEB PAGE

Choice of subset of measurements (1)
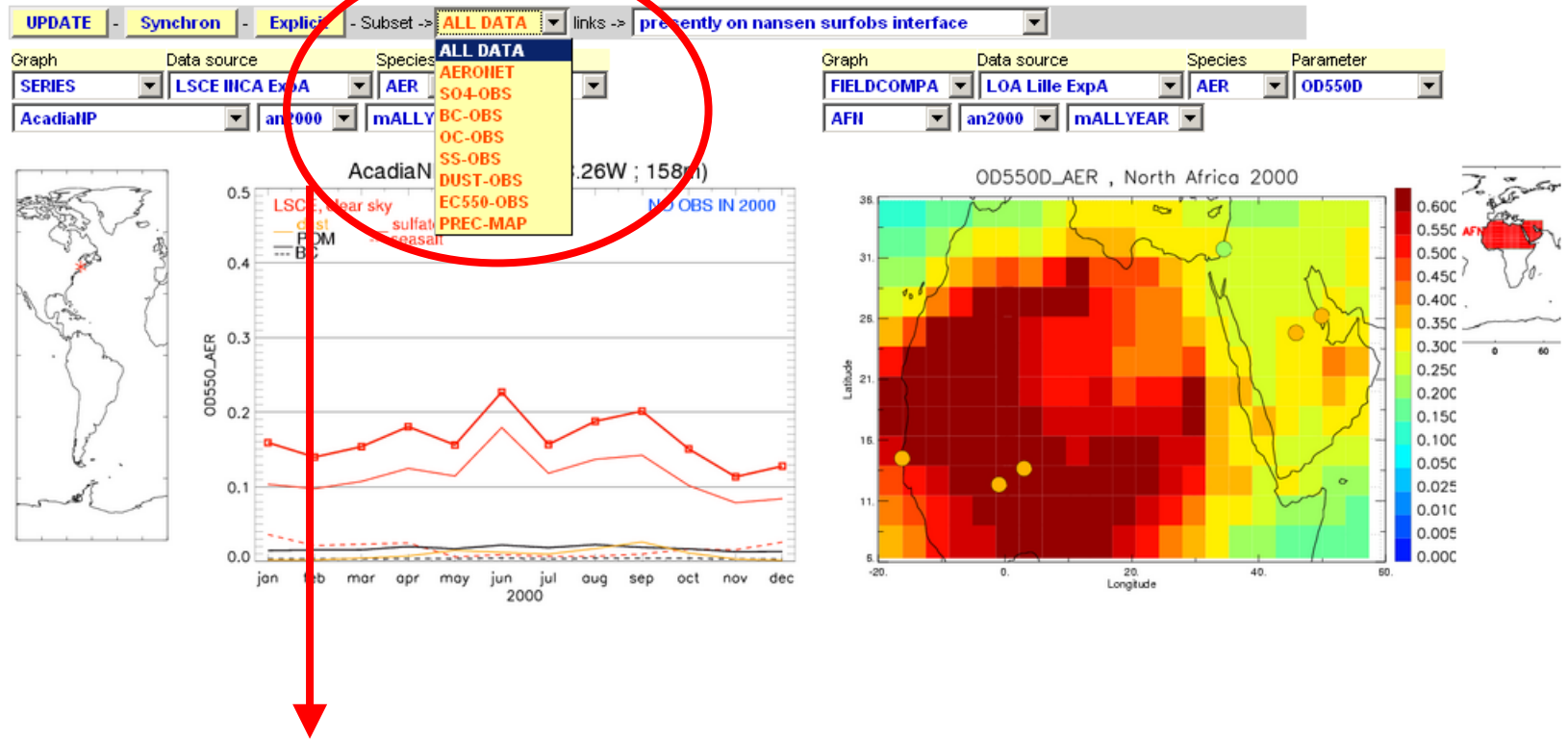
The « Subset » menu allows to restrict the list of stations to the stations with measurements for each considered variable
→ you see the timeseries plots only for these stations

Choice of subset of measurements (2)

Example of restricted list of stations
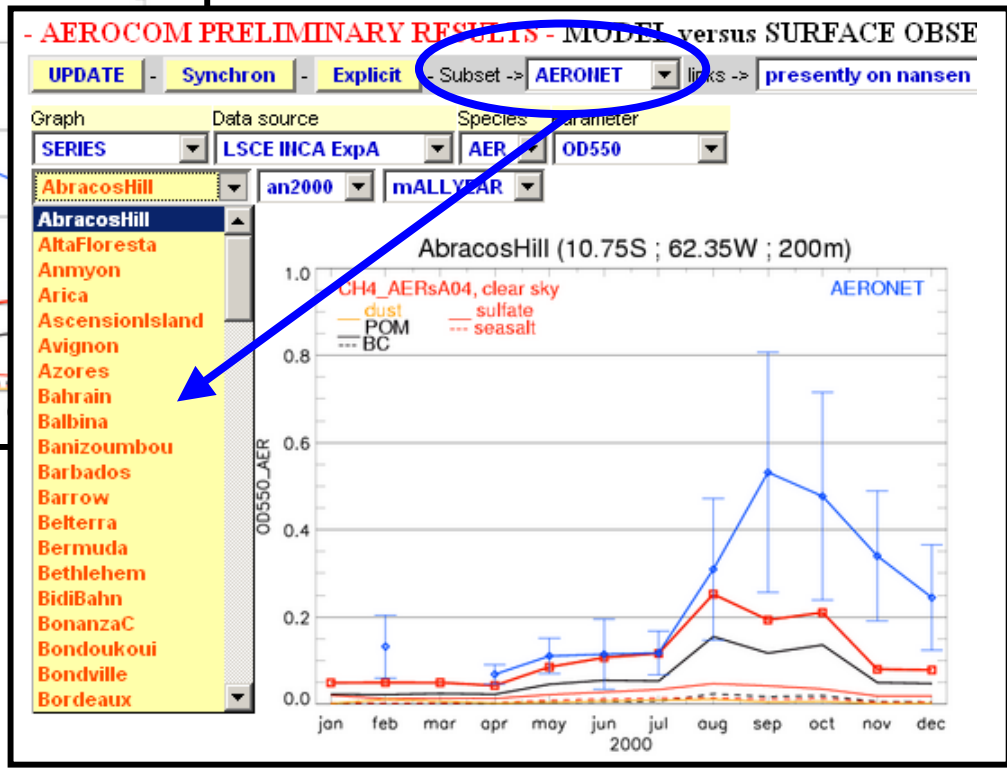
Basics principles for surfobs interface

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
FIELDCOMPA

AER
SO4
etc…

OD550
SCONCD
etc…

2000
2001
9999

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

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

SERIES		INCA LSCE		AER	OD550	

Erdemli			an2000	mALLYEAR	

Erdemli (36.55N ; 34.25E ; 0m)

Regions
or stations when
type = SERIES
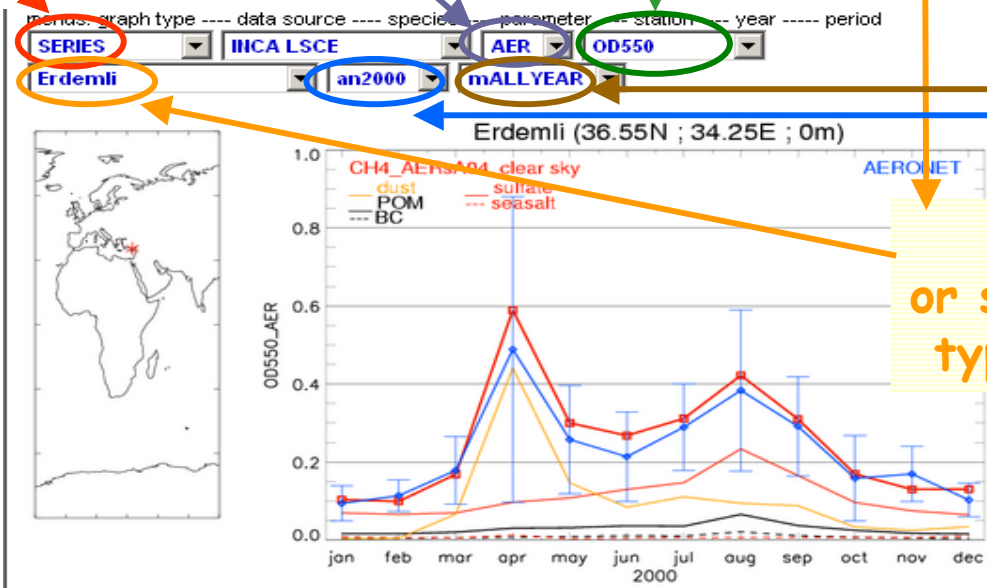
Explicit description of graphs

Choice of « Explicit » lead to only one described image on the page
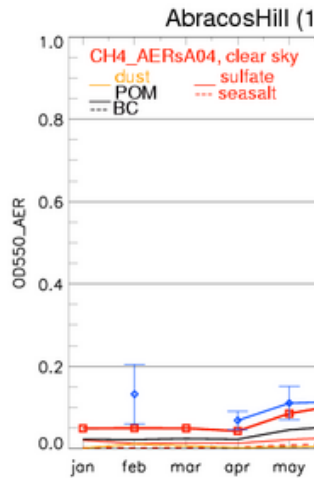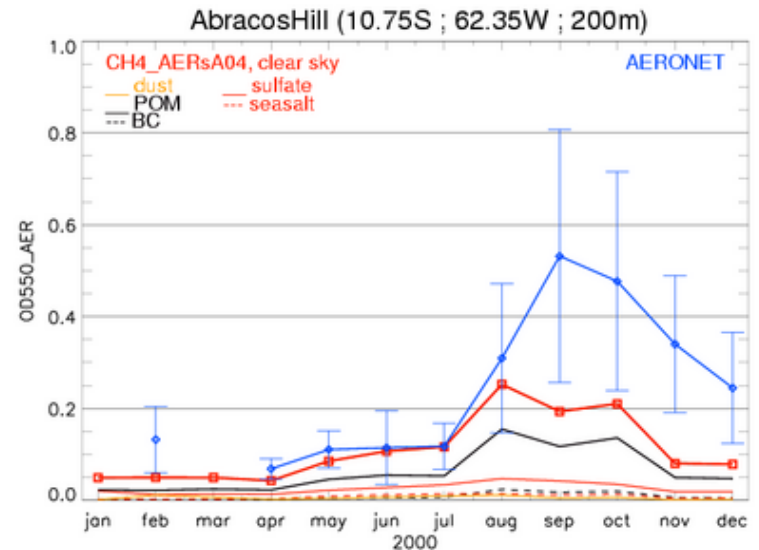
Synchronisation of the four graphs
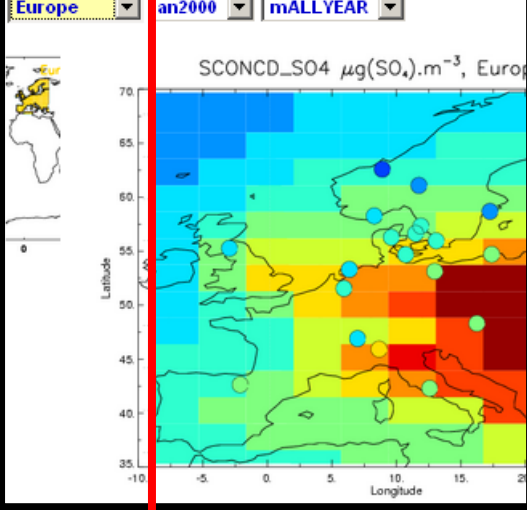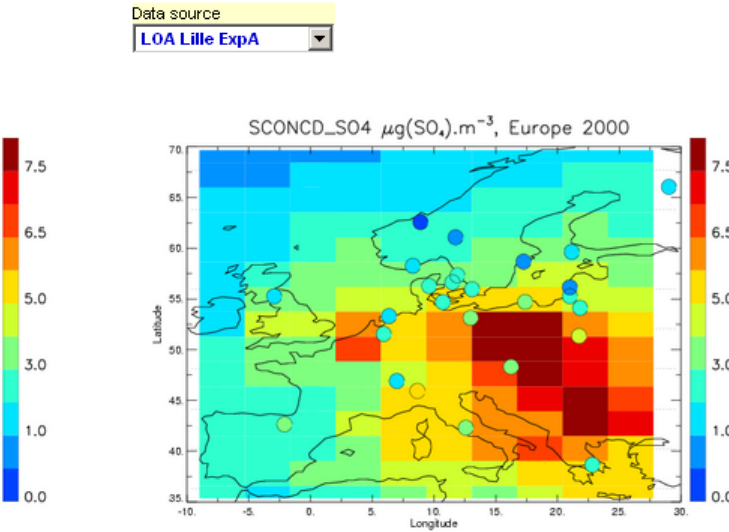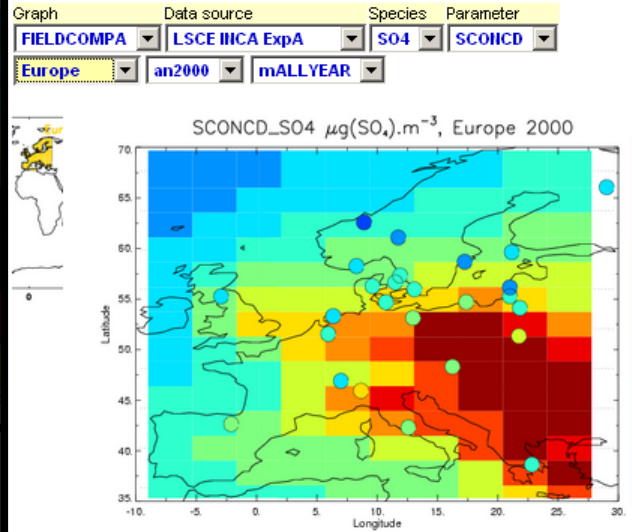
Choice of « Synchron »
 lead to same choice
of menus for the four
graphs
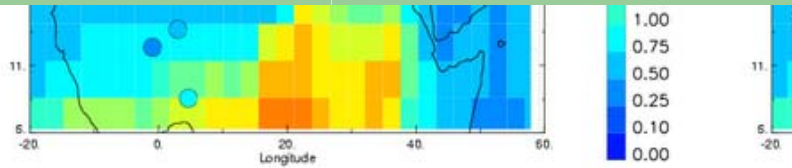(for different models)
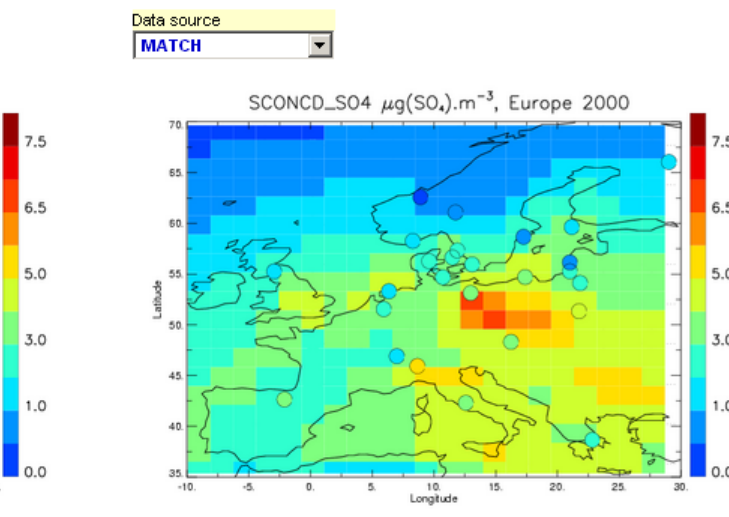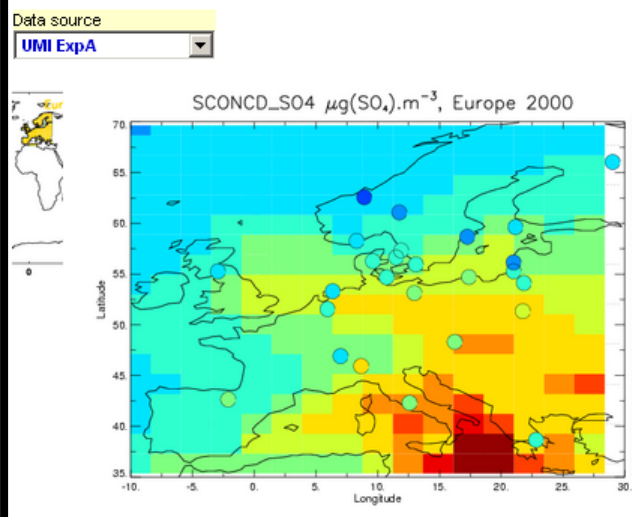
Links to other web pages at the bottom

Links to the data used for comparisons

see next slide...

AEROCOM web interfaces: Info on surface observations used for model comparison

<- BACK to images
BACK to AEROCOM WEBINTERFACE ENTRY PAGE

DOWNLOAD HERE ASCII OBSERVATION DATA USED FOR AEROCOM
restricted to contributors of AEROCOM
see info on data via website links given below

Measurements are password protected

ATTENTION: results are preliminary and authors need to be consulted before publication!

AERONET sun photometer network
--->AERONET website
contact Stefan Kinne @ dkrz - . - de

GAW network
The World Data Centre for Aerosols is one of five recognised World Data Centres which are part of the Global Atmosphere Watch website
contact Julian Wilson @ jrc - it

EMEP network
EMEP website
contact kjetil.torseth @ nilu - no

IMPROVE network
IMPROVE website
contact see IMPROVE webpage

PSI
Paul Scherrer Institute / Jungfraujoch data website
contact Urs Baltensperger

AEROCE
The Atmosphere-Ocean Chemistry Experiment (AEROCE) (via GAW)
contact Joe Prospero

AEROCOM MODELS
---> AEROCOM MODEL descriptions

Index of /AEROCOM/DATA/AEROCOM_WORK/surfobsdata

Name	Last modified	Size	Description
Parent Directory	28-Jun-2005 21:55	-	
aeroce_dust.tar	25-Oct-2005 14:00	500k	
aeroce_seasalt.tar	25-Oct-2005 17:17	500k	
aeronet_angstrom.tar	25-Oct-2005 17:18	20.0M	
aeronet_od.tar	25-Oct-2005 17:18	29.9M	
airmon_sulfate.tar	25-Oct-2005 17:19	1.0M	
emep_bc.tar	25-Oct-2005 17:19	250k	
emep_seasalt.tar	25-Oct-2005 17:19	2.5M	
emep_sulfate.tar	25-Oct-2005 17:20	10.3M	
gaw_seasalt.tar	25-Oct-2005 17:21	3.7M	
gaw_sulfate.tar	25-Oct-2005 17:20	3.7M	
improve_bc.tar	25-Oct-2005 17:23	9.5M	
improve_ec550.tar	25-Oct-2005 17:23	4.1M	
improve_oc.tar	25-Oct-2005 17:23	9.5M	
improve_seasalt.tar	25-Oct-2005 17:23	9.5M	
improve_sulfate.tar	25-Oct-2005 17:22	9.5M	
interpol_horizontal.pro	25-Oct-2005 18:21	12k	
interpol_vertical.pro	25-Oct-2005 18:21	2k	
level_vertical.pro	21-Jul-2004 09:34	4k	
obs_aerinput.prn	25-Oct-2005 18:00	30k	
old/	25-Oct-2005 18:22	-	
psi_bc.tar	25-Oct-2005 17:24	1.0M	
readme_emep	05-Oct-2005 15:48	1k	
readme_gaw	20-Jul-2004 19:05	1k	
readme_improve	05-Oct-2005 16:17	2k	
readme_psi	20-Jul-2004 19:15	1k	

All available measurements + IDL routines

SYNTHESIS web interface

http://nansen.ipsl.jussieu.fr/AEROCOM/DATA/synthesis.html
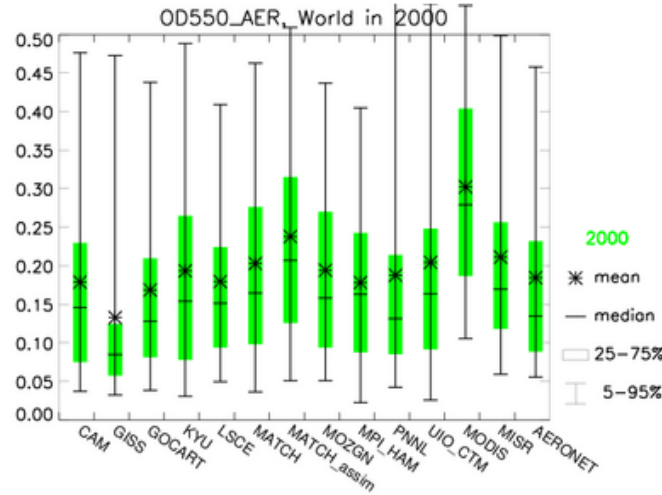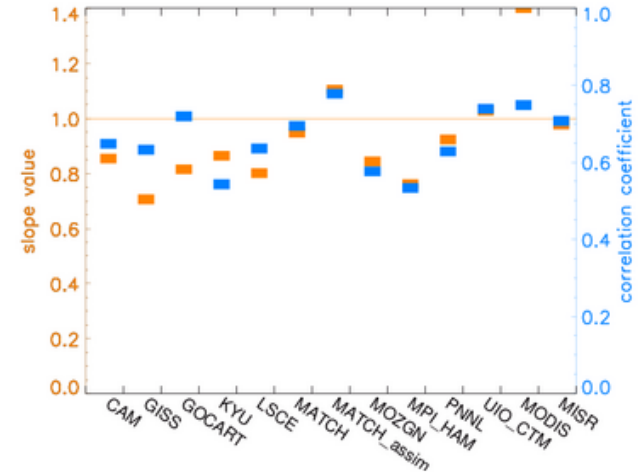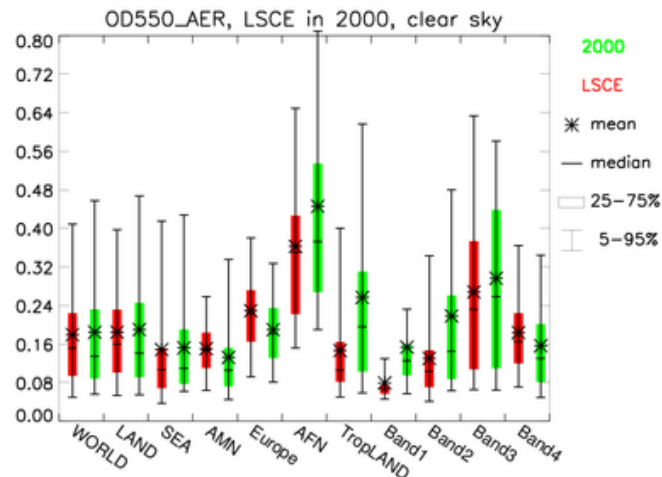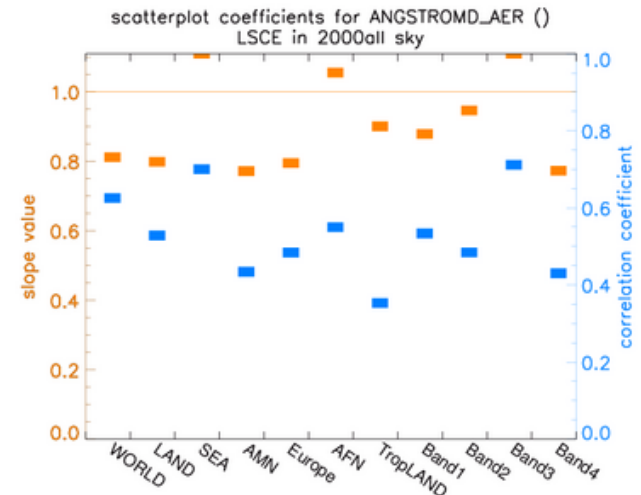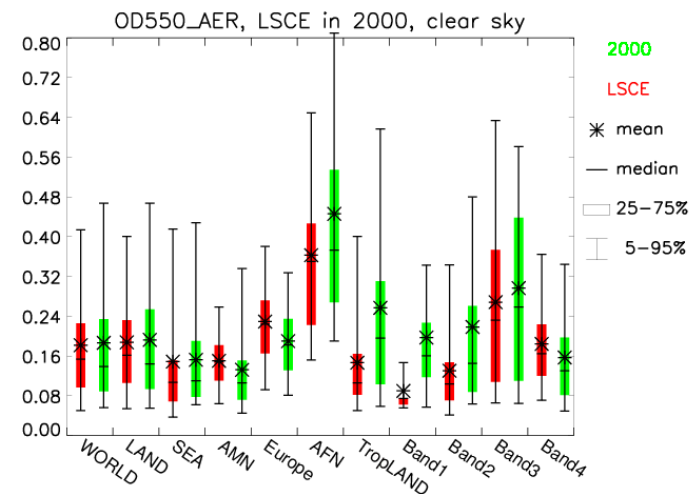
Synthesis plots (1)

STAT :
comparison of model/obs statistic values

Use of the monthly mean values at each station

OD550_AER, LSCE in 2000, clear sky

NAME =
${PARAM}_${SPECIES} _an${year}_mALLYEAR_ALLREGIONS_STAT.ps.png

$CONC3D\_SO4$ ($\mu g(SO_4).m^{-3}$), World in 2000
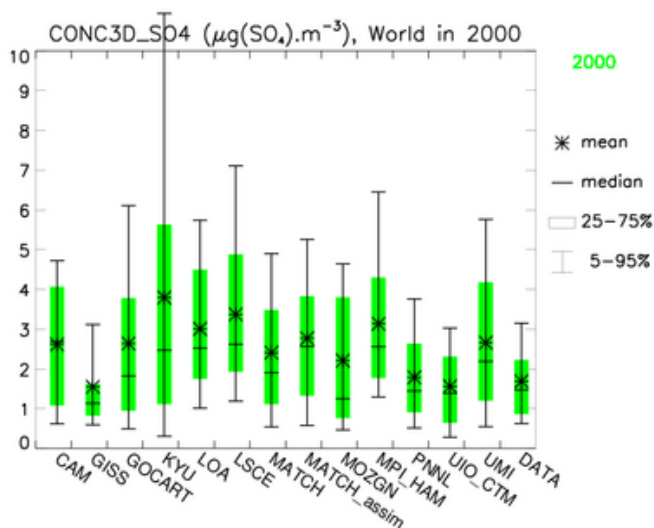
Use of the monthly mean values at each station
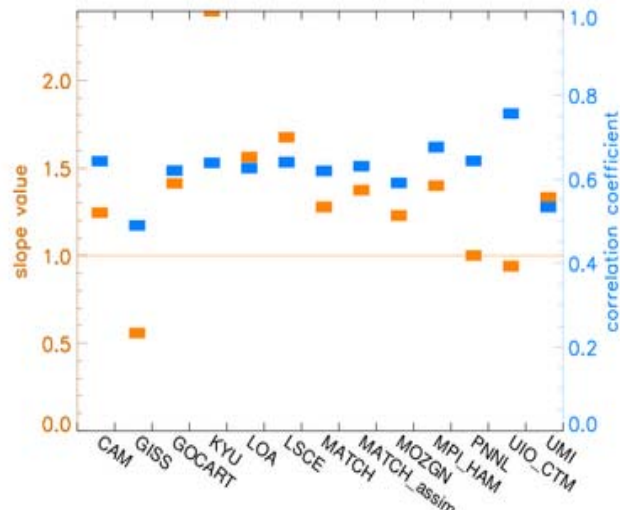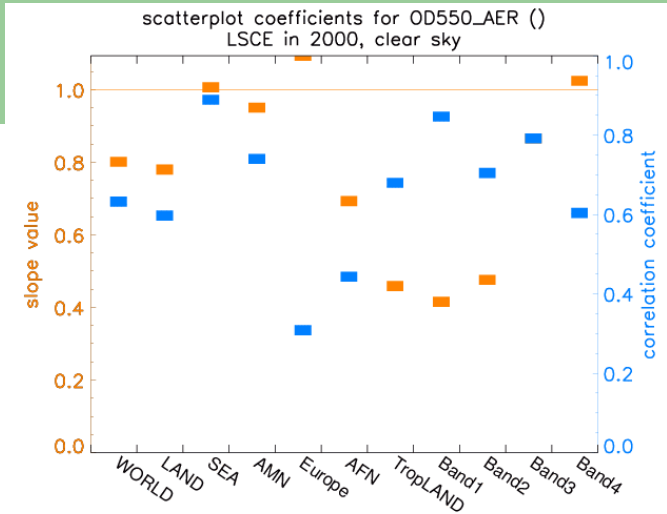
Exist for each region

NAME =
${PARAM}_${SPECIES} _an${year}_mALLYEAR_${region}_STAT.ps.png

Synthesis plots (2)

SCATCOEF :
comparison of slope
and regression coef

NAME =
${PARAM}_${SPECIES} _an${year}_mALLYEAR_ALLREGIONS_SURFOBS.ps.png

Values of slope and regression obtained from monthly values at each station
(obtained from scatterplots)

Exist for each region

NAME =
${PARAM}_${SPECIES} _an${year}_mALLYEAR_${region}_SCATCOEF.ps.png