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# AeroCom workshop introduction

Michael Schulz  
*Norwegian Meteorological Institute*



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Recent papers from AeroCom

Ongoing activities

AeroCom database and web interface

Ongoing work at MetNo

Workshop Programme



**Pan, X.**, et al.: *A multi-model evaluation of aerosols over South Asia: Common problems and possible causes*, Atmos. Chem. Phys. Discuss., 14, 19095-19147, doi:10.5194/acpd-14-19095-2014, 2014.

**Lacagnina Carlo** et al., *Aerosol Single Scattering Albedo over the global oceans: comparing PARASOL retrievals with AERONET, OMI and AeroCom models estimates*, JGR 2015 accepted.

**Kipling, Z.**, et al : *What controls the vertical distribution of aerosol? Relationships between process sensitivity in HadGEM3–UKCA and inter-model variation from AeroCom Phase II*, Atmos. Chem. Phys. **Discuss.**, 15, 25933-25980, doi:10.5194/acpd-15-25933-2015, 2015.

**Kristiansen, N. I.** et al. *Evaluation of observed and modelled aerosol lifetimes using radioactive tracers of opportunity and an ensemble of 19 global models*, Atmos. Chem. Phys. **Discuss.**, 15, 24513-24585, doi:10.5194/acpd-15-24513-2015, 2015.

+++???



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# Ongoing activities







# AeroCom phase III experiments

<https://wiki.met.no/aerocom/phase3-experiments>



## In-situ Measurement Comparison

Contact: Betsy Andrews (NOAA/ESRL/GMD), [Betsy.Andrews@noaa.gov](mailto:Betsy.Andrews@noaa.gov)

Experiment Description [INSITU\\_AeroComPIII\\_description.pdf](#)

List of stations with in-situ measurements to be used in comparison [here](#)

Modeller commitments (updated as commitments are made): [usp=sharing](#)

Follow project progress here: <https://docs.google.com/document/d/1buqxPbj7DhWrw8UgTGV8b47HWAzaeyTTeSzViq8Fo4M/edit?usp=sharing>

Tools to extract station data at station locations from model fields: <https://docs.google.com/document/d/1buqxPbj7DhWrw8UgTGV8b47HWAzaeyTTeSzViq8Fo4M/edit?usp=sharing>  
nc1: [https://github.com/kaizhangpnl/sample\\_insitu\\_kin](https://github.com/kaizhangpnl/sample_insitu_kin)

*See Betsy's talk*

[SPEvAq2fmtCzHljFWnoTmKsthUhU/edit?](#)

## Nitrate comparison

Contact: Huisheng Bian (GSFC/NASA, JCET/UMBC), [Huisheng.Bian@nasa.gov](mailto:Huisheng.Bian@nasa.gov)

Experiment Description [File](#)

NH3 Emissions from Geia [file](#)

File name convention [Nitrate Filename Protocol File](#)

Essential nitrate variables [file](#)

*See Huisheng's talk*

## Biomass Burning emissions experiments

Contact: Mariya Petrenko (NASA GSFC, USA; ORAU, USA), [mariya.m.petrenko@nasa.gov](mailto:mariya.m.petrenko@nasa.gov)

Experiment Description (updated November 26, 2014) [File](#)

Model output file naming convention (September 11, 2014) [File](#)

Variable names for model output (highlighted in blue/cyan; October 16

*See Mariya's talk*

## HTAP 2 experiments

Contact: Mian Chin (NASA) [mian.chin@nasa.gov](mailto:mian.chin@nasa.gov); Michael Schulz (MetNo) [michael.schulz@met.no](mailto:michael.schulz@met.no)

AeroCom specific experiment description for HTAP2 [File](#)

HTAP2 experiment description [HTAP website](#)

*See Mian's talk*

## Aerosol Lifetime experiments, Fukushima tracers

Model output [Specifications](#)

*See Ninas draft on ACPD*



# AeroCom phase III experiments

## <https://wiki.met.no/aerocom/phase3-experiments>



### AeroCom Control 2015

Contact: Michael Schulz (MetNo), michael.schulz@met.no

Experiment Description and motivation:

The model versions used for the different experiments are often not easily comparable. New model versions should be documented regularly to establish a state of the art comparison yearly. For this purpose AeroCom offers a semi-automated platform with identification via the AeroCom webinterface. Evaluation with surface observations and Aeronet observations will complete the documentation of emissions, re

Deadline for model submissions to be analysed before the Frascati instructions below.

Experiment name: AP3-CTRL2015

Output requested (2D fields, Monthly averages, preferably year 2010 meteorology):

- EMI Emissions: BC, OA, SO2, DMS, NOx, VOC, DUST, SS
- LOAD Column Loads: BC, OA, SO4, NO3, DUST, SS
- SCONC Surface concentrations: BC, OA, SO4, NO3, DUST, SS
- DEP Total Deposition: BC, OA, SO4, NO3, DUST, SS
- OD550 Aerosol optical depth @550nm: AER, OA, SO4, NO3, DUST, SS

The directory /media/scratch/incoming/AEROCOM-P3-AUTO-UPLOAD allows for automatic incorporation into the AeroCom database and workup. Uploaded files are processed automatically by the AeroCom tools and transferred into the AeroCom phase III data directory.

If correct in format and with correct filenames, results uploaded here will be processed over night and appear after few days as image catalogue on [http://aerocom.met.no/cgi-bin/aerocom/surfobs\\_annualrs.pl?PROJECT=AEROCOM&MODELLIST=AEROCOM-Phase-III](http://aerocom.met.no/cgi-bin/aerocom/surfobs_annualrs.pl?PROJECT=AEROCOM&MODELLIST=AEROCOM-Phase-III)

Short Recipe (Long version: [https://wiki.met.no/aerocom/data\\_submission](https://wiki.met.no/aerocom/data_submission))

- 1) Name files according to HTAPII/AeroComPhaseIII standards. One file per year and variable  
aerocom3\_<ModelName>\_<ExperimentName>\_<VariableName>\_<VerticalCoordinateType>\_<Period>\_<Frequency>.nc  
for example  
aerocom3\_GOCART-AP3-CTRL2015\_od550aer\_Column\_2010\_monthly.nc
- 2) Check for cf compliance some files (<http://aerocom-test.met.no/upload>)
- 3a) obtain account on aerocom-users server  
3) create directory on aerocom-users server:  
/media/scratch/incoming/AEROCOM\_AUTO\_UPLOAD/(MODELNAME)/renamed/  
Use exactly the same model name as used for file names. Attention to lower&upper case!!
- 4) Put files directly into this "renamed" directory.

*See this and Michael's talk*


*More initiatives will be proposed during this workshop  
On Size evaluations, Perturbations, Semi-direct effect,  
Satellite data evaluation, ...*




# Formatting ?? Has improved !!

<http://aerocom-test.met.no/upload>





**Task Force on Hemispheric  
Transport of Air Pollution**



File upload facility for TFHTAP model data

---

[Help](#)

**File and CF-Version**

Select File(s) to Upload

Select CF-version to validate

**Test Results**

File Name	File size	Upload Status
UM-CAM-v01_SR6NA_tracerm_2001_0003.nc	741 kByte	failure

**CF-Convention Test**

- ✘ global Conventions attribute should be set to "CF-1.1", not "CF-1.0" (2.6.1)
- ✘ lev: missing formula variable in file: p0 (4.3.2)
- ✘ lon: a coordinate variable must have values that are strictly monotonic (5)
- ✘ lat: bounds variable "lat\_bnds" not found in file (7.1)
- ✘ lon: bounds variable "lon\_bnds" not found in file (7.1)
- ✘ lev: bounds variable "lev\_bnds" not found in file (7.1)
- ✘ time: bounds variable "time\_bnds" not found in file (7.1)
- ℹ running CFchecker version 1.5.11 (INIT)

... [click here](#) to list all errors!

This tool is developed and maintained by JÜLICH



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# AeroCom database and web interface







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# New Features of AEROCOM web interface

[http://aerocom.met.no/cgi-bin/aerocom/surfobs\\_annualrs.pl](http://aerocom.met.no/cgi-bin/aerocom/surfobs_annualrs.pl)



Aerocom Phase II INTERFACE

[aerocom.met.no/cgi-bin/aerocom/surfobs\\_annualrs.pl](http://aerocom.met.no/cgi-bin/aerocom/surfobs_annualrs.pl)

Innblikk FOU.KL WebOfSci Scholar ACP AMT He/NoDE Go/NoDe WikiNO WikiDE WikiEN oslo AEROCOM work News AeroWarn Maps Google Drive CAMS

Aerocom Phase II INTERFACE

**- AEROCOM phase II INTERFACE - MODELS & scores**

Project-> AEROCOM Subset/Paper-> **Phase-III-CTRL2015** s & scores  
 Phase-III  
 All-Phases-CTRL  
 Phase-II-CTRL  
 Phase-II  
 Hindcast  
 Phase-I&II  
 AEROCOM-B&PRE  
 AEROCOM-A  
 MyList

2-Panels SYNCHRONISE PANELS reset share help

Graph Dataset Variable Graph Dataset Variable

MAP KYU OD550\_AER MAP SPRINTARS-T213\_AP3-CTRL2015 OD550\_AER

WORLD an2000 WORLD an2010 Monthly All Year

OD550\_AER 2000

Latitude Longitude source: AEROCOM

OD550\_AER 2010 mean 0.093

Latitude Longitude source: AEROCOM

image created 04.01.2011 11:15

image created 02.10.2015 17:53

Show info hovering over image Edit Subset "MyList" Show URL to current

Filter models w RegExpr: Models/Stations on year: ALLYEARS Models on variables: ALLVARS



# How to find your way through?



AeroCom Phase II INTERFACE

aerocom.met.no/cgi-bin/aerocom/surfobs\_annualrs.pl

WikiDE WikiEN oslo AEROCOM work News AeroWarn

AeroCom Phase II INTERFACE

reset share help

AeroCom

Project-> AEROCOM

Graph Type

Data Set / Model

Parameter

Place-Year-Freq

Latitude

90

60

30

0

-30

-60

-90

-180 -135

CAM5 A

image created 02.10.2015 17:3

Show info hovering

Filter models w Reg

AEROCOM home //

Authors of Web Interface

Models on variables: ALLVARS

for interface=>michael.schulz@met.no

- ✓ CAM5\_AP3-CTRL2015
- CAM5\_GLOFIR0
- CAM5\_GLOFIR1
- CHASER\_BASE
- CHASER\_NGLONH3120
- CHASER\_NGLONOX
- CHASER\_NGLORH110
- CHASER\_NGLOSO2
- CHASER\_NGLOTEMPA1P5
- ECHAM6-SALSA\_GLOFIR0
- ECHAM6-SALSA\_GLOFIR1
- ECHAM6-SALSA\_GLOFIR2
- ECHAM6-SALSA\_GLOFIR3
- ECHAM6-SALSA\_GLOFIR4
- ETHZ-ECHAM6-HAM2\_CTRL2015
- GEOS5\_GLOFIR
- GFDL-AM3p10\_GLOFIR1
- GOCArtv5\_GLOFIR
- HadGEM3\_GLOFIR0
- HadGEM3\_GLOFIR0p5
- HadGEM3\_GLOFIR1
- HadGEM3\_GLOFIR2
- HadGEM3\_GLOFIR5
- INCA\_GLOFIR0
- INCA\_GLOFIR0p5
- INCA\_GLOFIR1
- INCA\_GLOFIR2
- INCA\_GLOFIR5
- OsloCTM2\_INSITU
- OsloCTM2\_NGLONH3120
- OsloCTM2\_NGLONOX
- OsloCTM2\_NGLORH110
- OsloCTM2\_NGLOSO2
- OsloCTM2\_NGLOTEMPA1P5
- OsloCTM3\_AP3-CTRL2015
- SPRINTARS-T106\_AP3-CTRL2015
- SPRINTARS-T213\_AP3-CTRL2015
- SPRINTARS\_GLOFIR
- SPRINTARS\_GLOFIR0
- SPRINTARS\_GLOFIR0p5
- SPRINTARS\_GLOFIR1
- SPRINTARS\_GLOFIR2
- SPRINTARS\_GLOFIR5
- TMS\_AP3-CTRL2015
- OBSERVATIONS-ONLY



# Filter on model names – years - variables



Browser address bar: [aerocom.met.no/cgi-bin/aerocom/surfobs\\_annualrs.pl](http://aerocom.met.no/cgi-bin/aerocom/surfobs_annualrs.pl)

Navigation: Innblikk FOU.KL WebOfSci Scholar ACP AMT He/NoDE Go/NoDe WikiNO WikiDE WikiEN

- AEROCOM phase II INTERFACE - MODEL versus DATA, Model maps & scores

Project-> AEROCOM Subset/Paper-> All-Phases-CTRL 2-Panels SYNCHRONISE P

Graph: MAP Dataset: KYU Variable: OD550\_AER Graph: MAP

WORLD an2000 Monthly All Year

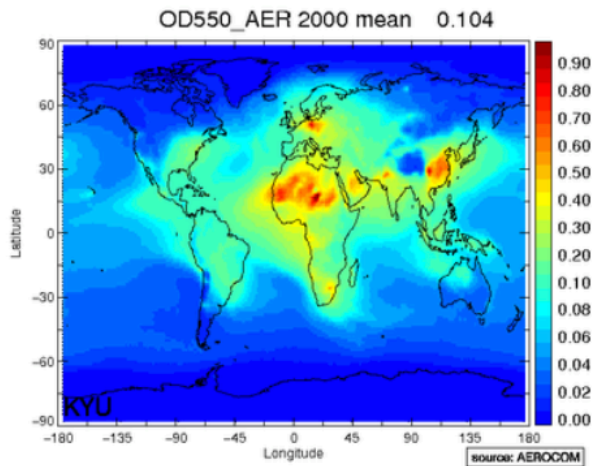


image created 04.01.2011 11:15

Show info hovering over image Edit Subset "MyList" Show URL to current

Filter models w RegExpr: Models/Stations on year: ALLYEARS Models on variables

[AEROCOM home](#) // [AEROCOM protocol](#) // [Contributing authors](#) // [DATA acknowledgement](#)  
Authors of Web Interface and Visualisation: AEROCOM // Michael Schulz, Jan Griesfeller -- feedback for interface=>micha

- UDMODIS\_AER
- RFEAS\_BC
- RFEAS\_SO4
- RFEAS\_SO4ANT
- RFEAS\_SS
- RFECS\_BC
- RFECS\_SO4
- RFECS\_SO4ANT
- RFECS\_SS
- RFEODAS\_BC
- RFEODAS\_SO4
- RFEODAS\_SO4ANT
- RFEODAS\_SS
- RFEODCS\_BC
- RFEODCS\_SO4
- RFEODCS\_SO4ANT
- RFEODCS\_SS
- SCATC550DRY\_AER
- SCATC550\_AER
- SCONC\_BB
- SCONC\_BC
- SCONC\_DMS
- SCONC\_DUST
- SCONC\_EQBC
- SCONC\_HNO3
- SCONC\_NH4
- SCONC\_NO2
- SCONC\_NO3
- SCONC\_OA
- SCONC\_OC
- SCONC\_PM10
- SCONC\_POA
- SCONC\_POM
- SCONC\_SO2
- SCONC\_SO4
- SCONC\_SOA
- SCONC\_SS
- SED\_BC
- SED\_DUST
- SED\_POM
- SED\_SO4
- SED\_SS
- SSA\_AER
- SSA\_BC
- SWSRFAS\_BBANT
- SWSRFAS\_BCFANT
- SWSRFAS\_DUST
- SWSRFAS\_NO3ANT
- SWSRFAS\_OA
- SWSRFAS\_OAFFANT
- SWSRFAS\_SO4

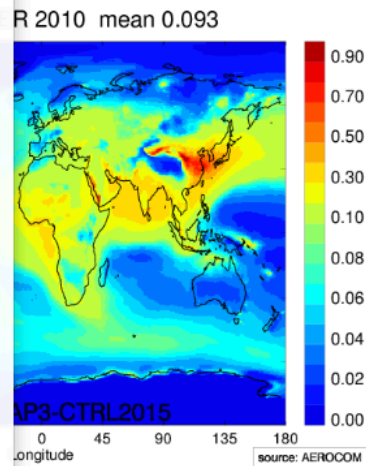
Phase II INTERFACE

News AeroWarn Maps Google Drive CAMS



Variable: T213\_AP3-CTRL2015

an2010 Monthly All Year





# See all available years for all models in list



- AEROCOM phase II INTERFACE - MODEL versus DATA, Model maps & scores

Project-> AEROCOM Subset/Paper-> All-Phases-CTRL 2-Panels SYNCHRONISE PANELS

Graph	Dataset	Variable	Graph	Dataset	Variable
MAP	KYU	OD550_AER	MAP	SPRINTARS-T213_AP3-CTRL2015	OD550_AER
WORLD	an2000	Monthly All Year	WORLD	an2010	Monthly All Year

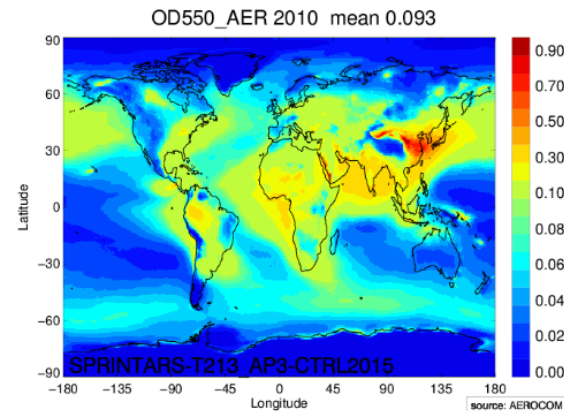
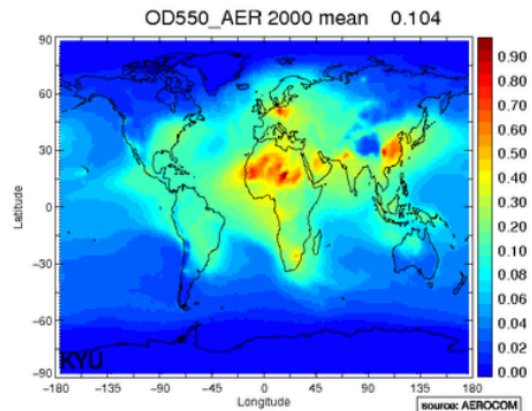


image created 04.01.2011 11:15

image created 02.10.2015 17:53

Show info hovering over image | Edit Subset "MyList" | Show URL to current

Filter models w RegExpr: Models/Stations on year  ALLYEARS Models on variables: ALLVARS

- an 10
- an1996
- an1997
- an2000
- an2001
- an2002
- an2003
- an2004
- an2006
- an2007
- an2008
- an2009
- an2010
- an2999
- an96-02
- an9999

[AEROCOM home](#) /// [AEROCOM protocol](#) /// [Contributing authors](#) /// [Judgement](#)  
Authors of Web Interface and Visualisation: AEROCOM // Michael Schulz, Jan Griesfe

or interface=>michael.schulz@met.no





# Model filter example: showing all "CAM" models in All-Phases-CTRL



- AEROCOM phase II INTERFACE - MODEL versus DATA, Model maps & scores

Project-> AEROCOM Subset/Paper-> All-Phases-CTRL 2-Panels SYNCHRONISE PANELS

reset share help

AeroCom

Graph	Dataset	Variable	Graph	Dataset	Variable
MAP	✓ BCC_AGCM2.0.1_CAM.A2.CTRL	OD550_AER	MAP	BCC_AGCM2.0.1_CAM.A2.CTRL	OD550_AER
WORLD			WORLD	an2006	Monthly All Year

- CAM
- CAM4-Oslo-Vcmip5.A2.CTRL
- CAM4-Oslo.A2.CTRL
- CAM5-MAM3-PNNL.A2.CTRL
- CAM5.1-MAM3-PNNL.A2.CTRL
- CAM53-Oslo\_r610Nudge\_011015AK\_SOA\_r610\_PD
- CAM5\_AP3-CTRL2015
- OBSERVATIONS-ONLY

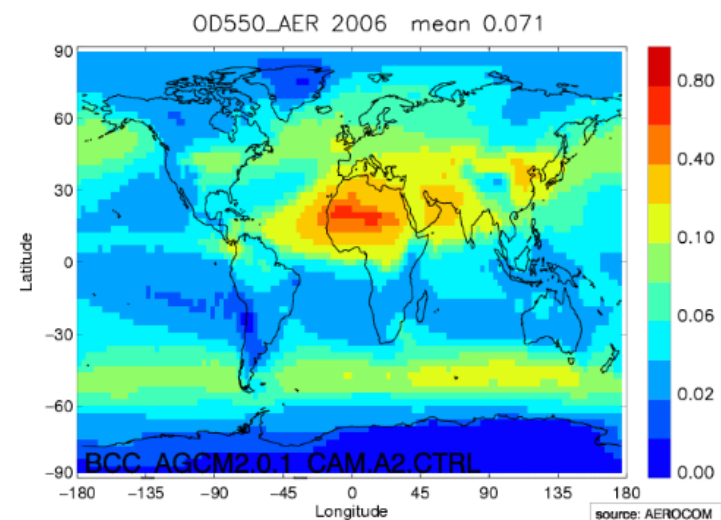
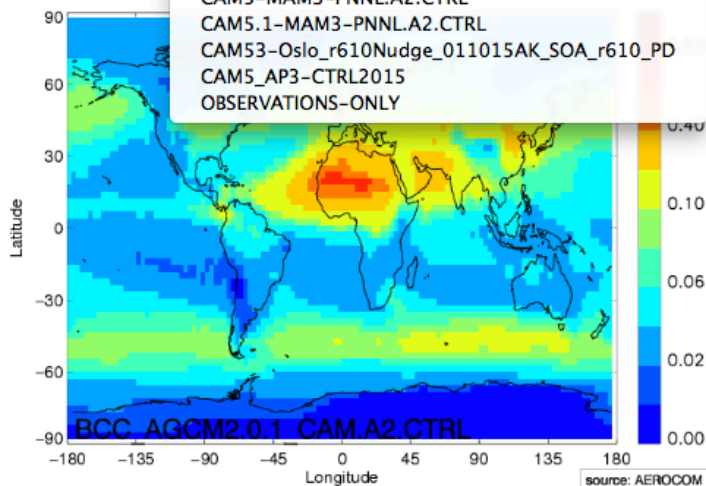


image created 06.11.2014 12:55

image created 06.11.2014 12:55

Show info hovering over image Edit Subset "MyList" Show URL to current

Filter models w Reg Expr: CAM Models/Stations on year: ALLYEARS Models on variables: ALLVARS

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 Authors of Web Interface and Visualisation: AEROCOM // Michael Schulz, Jan Griesfeller -- feedback for interface=>michael.schulz@met.no



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# Share current URL to interface, link to help wiki see all observations available check out different network variants



- AEROCOM phase II INTERFACE - MODEL versus DATA, Model maps & scores

Project-> EMEP Subset/Paper-> MyList 2-Panels SYNCHRONISE PANELS



Graph Dataset Variable  
SERIES EMEP\_svn2982\_150422ST\_Trend SCONC\_BC  
DE-Melpitz an2012 Monthly All Year EBAS

Graph Dataset Variable  
SERIES OBSERVATIONS-ONLY SCONC\_BC  
DE-Melpitz an2012 Monthly All Year EBASMC

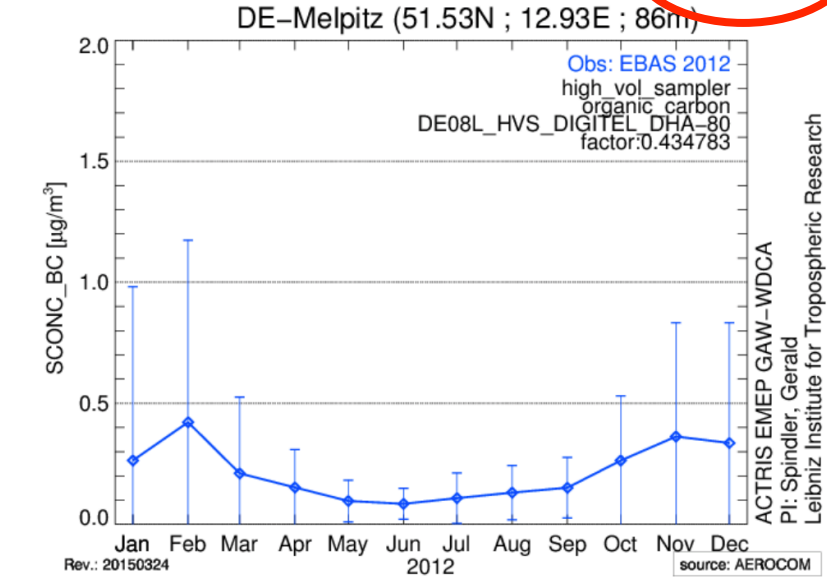
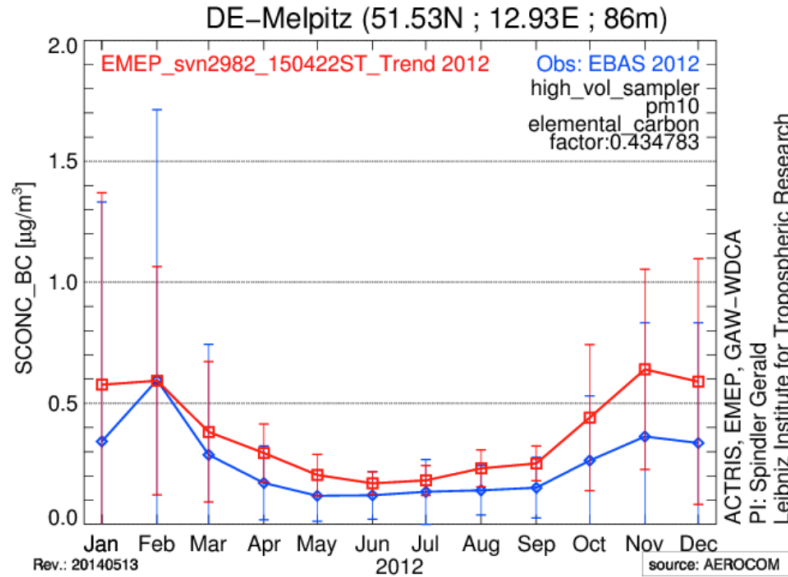


image created 30.04.2015 9:29

image created 07.04.2015 12:14

Show info hovering over image Edit Subset "MyList" Show URL to current

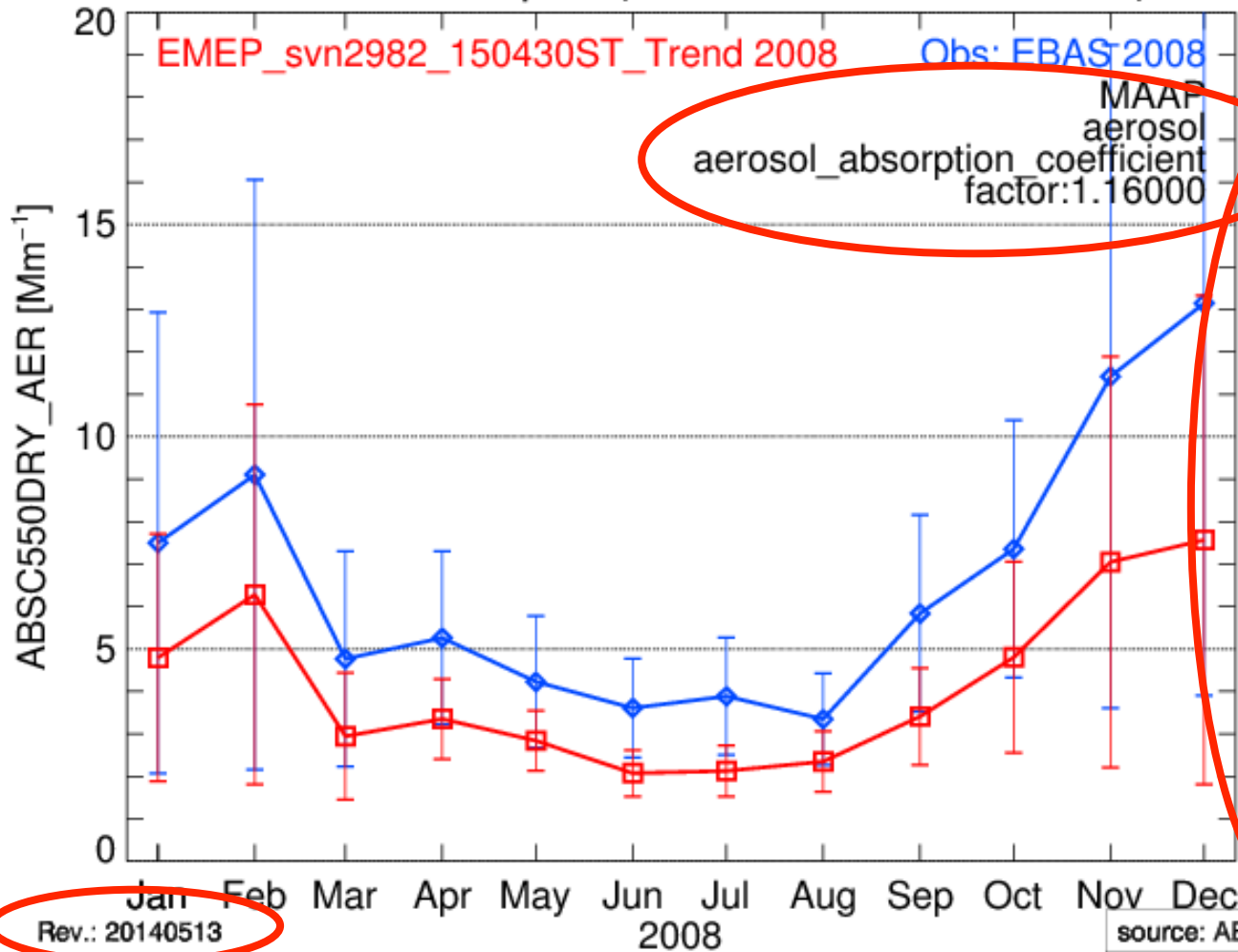
Filter models w RegExpr: Models/Stations on year: ALLYEARS Models on variables: ALLVARS



# Documentation of instruments, PIs, Institutes, Networks, Revision of data set.....



DE-Melpitz (51.53N ; 12.93E ; 86m)



EMEP, EUSAAR, GAW-WDCA  
 PI: Sonntag Andre  
 Leibniz Institute for Tropospheric Research

Rev.: 20140513



*Preliminary workup based on AeroCom database*

My excuses for model result misinterpretation





# Looking into three generations of control experiments



Phase I

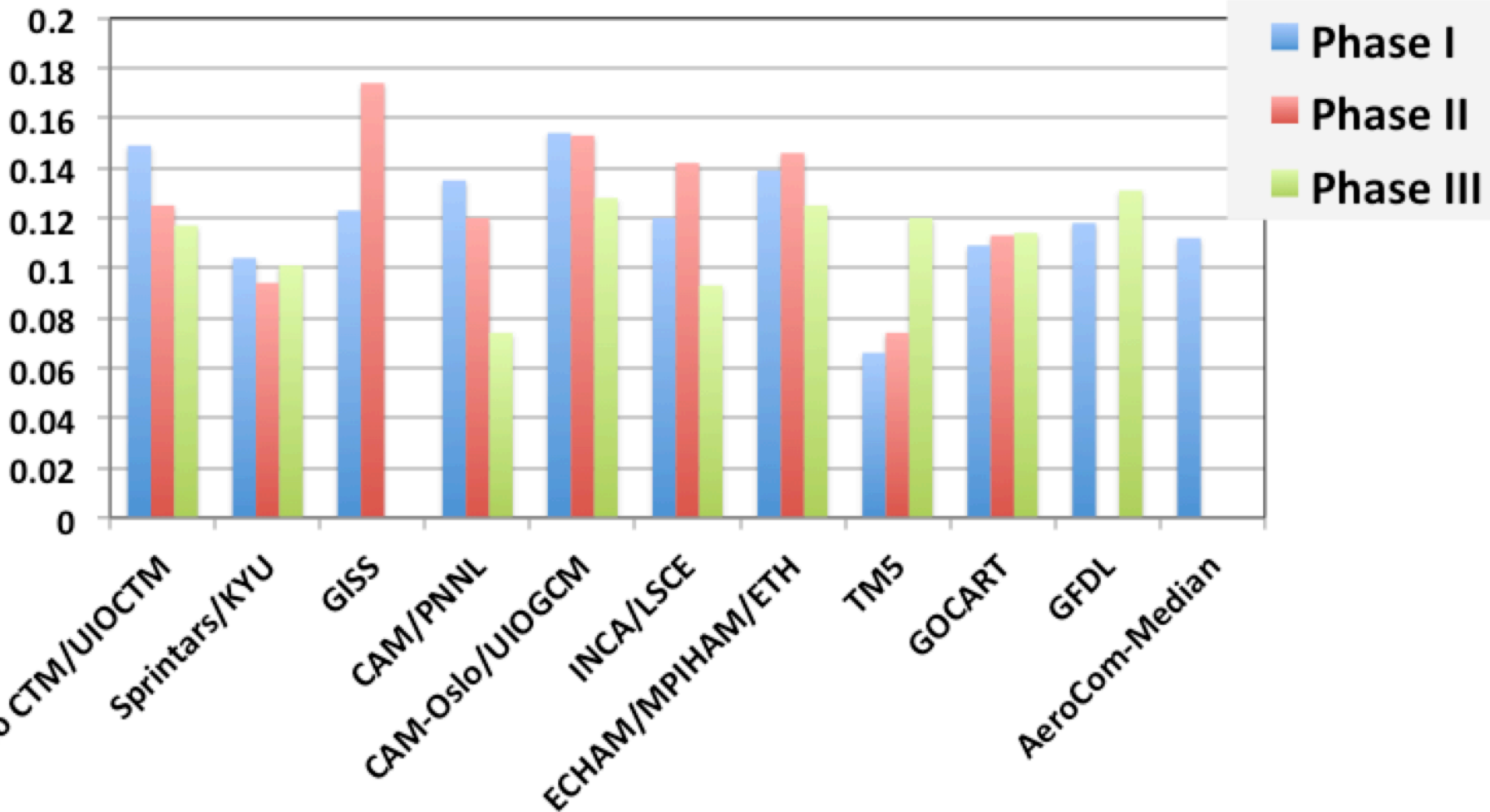
Phase II

Phase III

units >	Black Carbon				Dust		Sea salt		Total Aerosol	
	Days	TG	ugm-3	TG/ugm-3 Ratio LOAD-	Days	TG	Days	TG	1	1
Model	LT BC	Load BC	SCONC_BC	SCONC	LT Dust	Load Dust	LT SS	Load SS	RMS OD550	Mean OD550
Oslo CTM/UIOCTM	6.39	0.38	0.13	2.86	5.09	21.91	0.36	9.17	0.13	0.15
Sprintars/KYU	7.08	0.37	0.41	0.90	1.59	17.36	0.69	7.34	0.14	0.10
GISS	7.79	0.23	0.17	1.37	7.04	29.05	1.07	6.32	0.14	0.12
CAM/PNNL	6.04	0.19			3.91	22.14	0.27	10.89	0.13	0.14
CAM-Oslo/UIOGCM			0.16						0.29	0.15
INCA/LSCE	7.14	0.22	0.12	1.86	6.46	20.48	0.30	18.19	0.18	0.12
ECHAM/MPIHAM	5.33	0.11	0.11	0.99	4.55	8.27	0.76	10.50	0.16	0.14
TM5	5.83	0.12	0.15	0.78	2.02	9.31	0.29	6.39	0.16	0.07
GOCART	7.26	0.27	0.16	1.74	3.44	29.75	0.50	13.27	0.14	0.11
GFDL	8.57	0.26			3.28	21.28			0.13	0.12
AeroCom-Median	7.27	0.18	0.13	1.37	5.44	15.89	0.36	6.06	0.09	0.11
Oslo CTM	6.03	0.13	0.09	1.38					0.15	0.13
Sprintars v384	6.69	0.15	0.19	0.81	1.97	13.22	0.28	2.02	0.18	0.09
GISS-Matrix	3.48	0.07	0.11	0.64	5.89	24.91	0.55	5.38	0.16	0.17
CAM5-MAM3	3.88	0.08	0.09	0.94	2.45	21.05	0.69	18.87	0.17	0.12
CAM-Oslo	8.27	0.24	0.10	2.42	2.60	11.72	0.28	4.91	0.13	0.15
INCA	7.10	0.15	0.12	1.28	5.42	22.71	0.27	17.85	0.20	0.14
ECHAM	5.51	0.12	0.14	0.88	4.87	10.52	0.95	12.86	0.12	0.15
TM5	6.89	0.15	0.13	1.16	2.78	13.25	0.33	6.19	0.15	0.07
GOCART			0.10						0.13	0.11
GFDL										
AeroCom-Median										
Oslo CTM	4.13	0.11	0.18	0.61	2.80	14.15	0.21	5.39	0.14	0.12
Sprintars	10.48	0.23	0.12	1.92	2.06	15.55	0.27	3.71	0.15	0.10
GISS										
CAM	12.79	0.08			2.80	25.09		9.91	0.19	0.07
CAM-Oslo	4.59	0.10	0.08	1.22	1.72	19.87	0.85	5.16	0.27	0.13
INCA			0.10						0.19	0.09
ECHAM/ETH	6.69	0.13	0.11	1.17	4.96	13.34	0.61	10.80	0.21	0.13
TM5	8.49	0.19	0.12	1.57	3.81	11.49	0.40	7.40	0.13	0.12
GOCART			0.22		4.03	32.33	0.60	13.83	0.12	0.11
GFDL									0.16	0.13
AeroCom-Median										



### Mean Global AOD (2000/2006/2010)





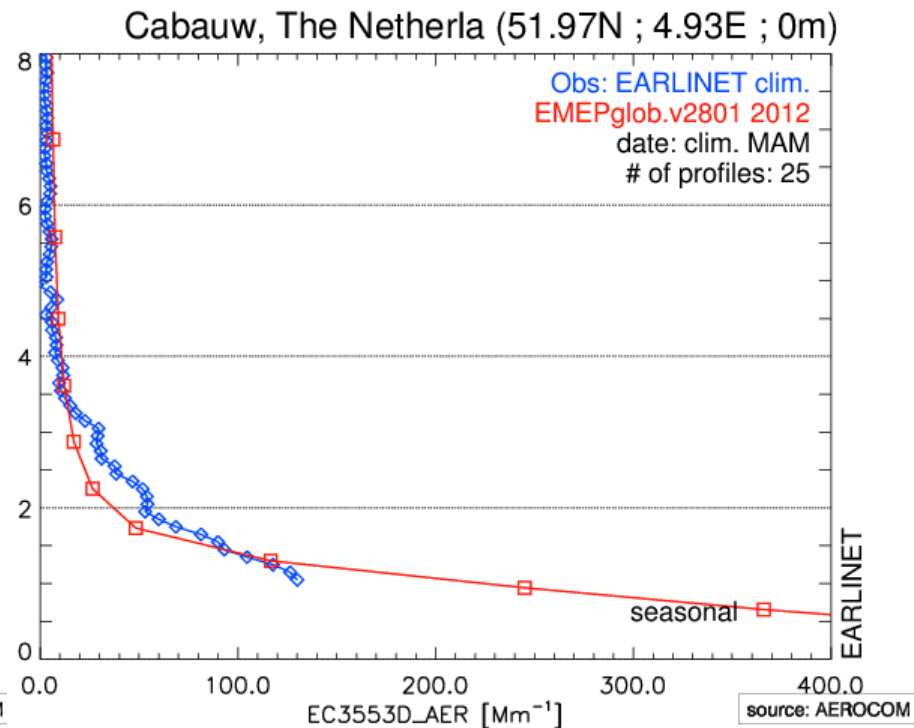
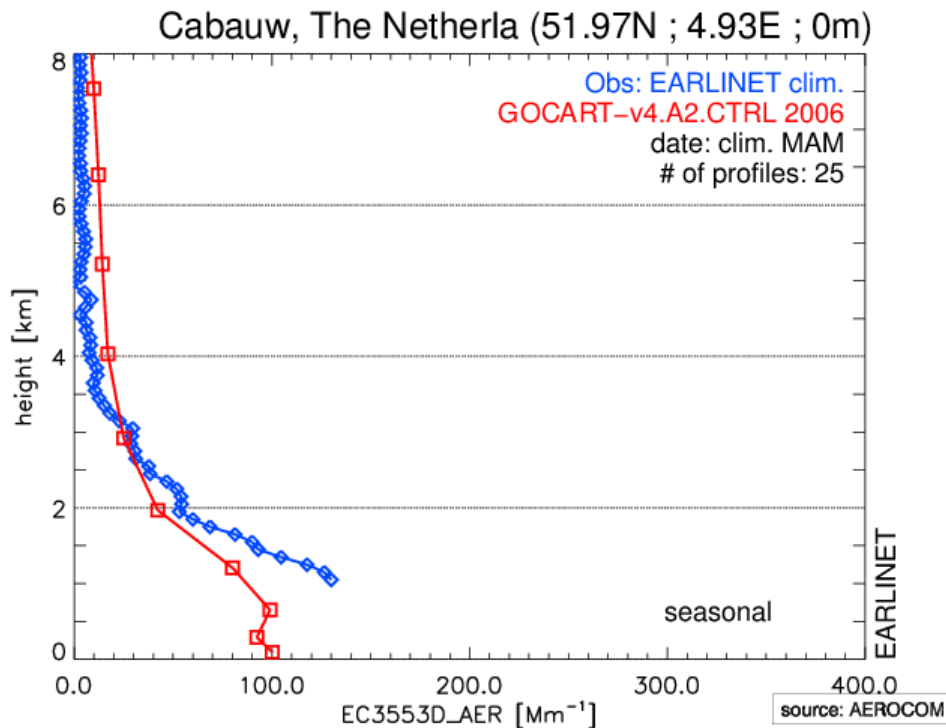
# Looking into three generations of control experiments



	Dust		Sea salt		Total Aerosol	
	Days	TG	Days	TG	1	1
	LT Dust	Load Dust	LT SS	Load SS	RMS OD550	Mean OD550
<b>Rel Stdev phase I</b>	44%	37%	54%	39%	30%	21%
<b>Rel Stdev phase II</b>	44%	35%	55%	69%	17%	24%
<b>Rel Stdev phase III</b>	36%	40%	49%	45%	27%	17%



# Other ongoing validation work Comparison to Earlinet lidar climatology Upper tropospheric aerosol background?

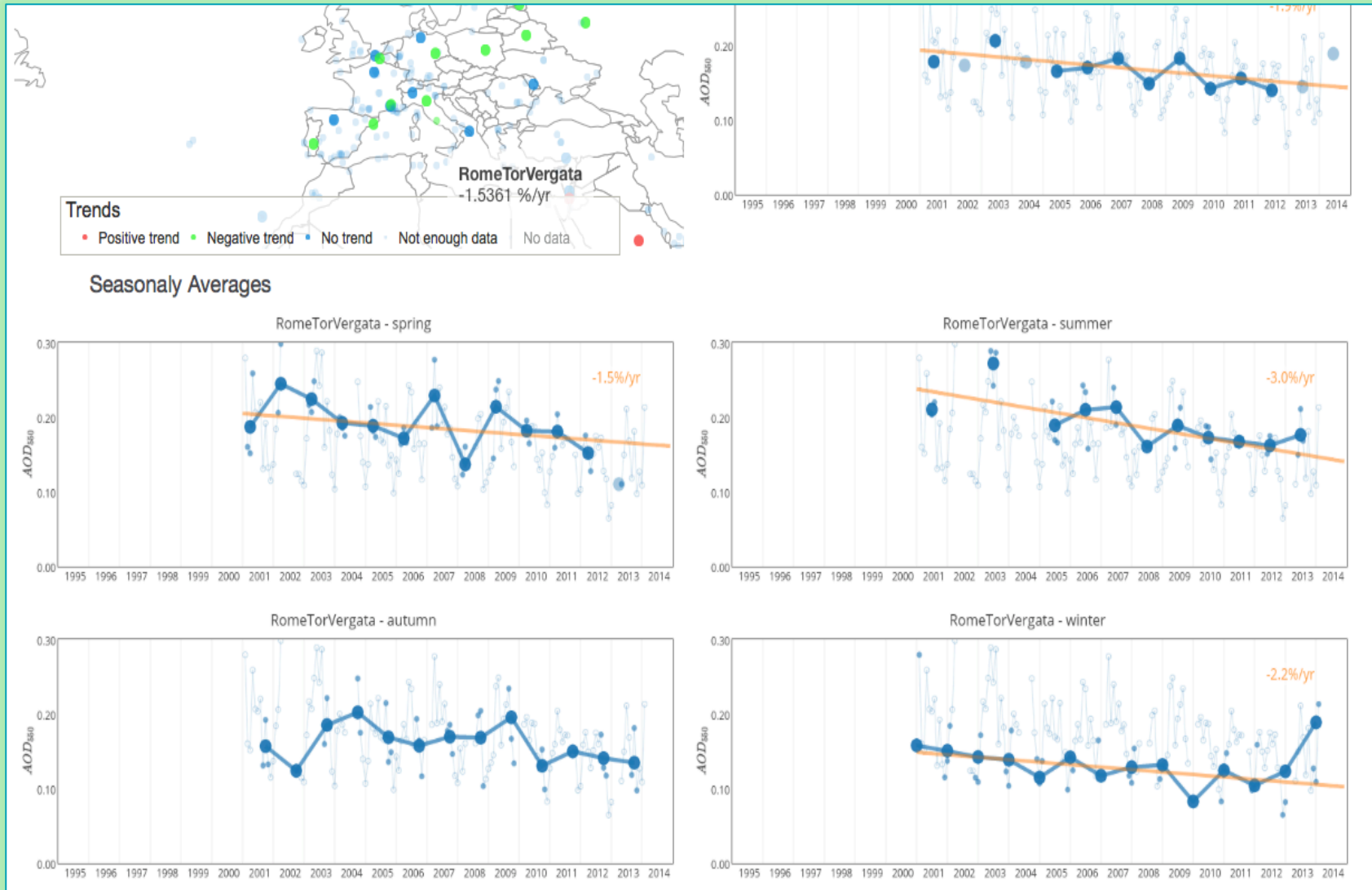


# Better link of maps, data and trends Soon for more variables plus models



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<http://aero.com.met.no/trends/station-trends.html>



Courtesy Augustin Mortier / Met.No



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# Programme of 14<sup>th</sup> AeroCom workshop





# 14<sup>th</sup> AeroCom workshop 2015

## AerChemMIP/CCMI/AeroCom/AeroSat joint meeting



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**5.10. – 9.10.  
Frascati, Italy**



**Monday**

**Tuesday**

**Wednesday**

**Thursday**

**Friday**

**AeroCom**

**AeroCom**

**AerChemMIP**

**AeroCom.....AEROSAT**

**CCMI**

**CCMI**

**Host ESA, Simon Pinnock (AeroCom, AerChemMIP, Aerosat)**

**Host CNR, Federico Fierli (CCMI)**



- 8:00 – 9:30** **AeroCom/AeroSAT registration**  
(50 Euro workshop fee will be collected at registration)  
time to **hang-up posters** and to mingle
- 9:30 – 11:00** **SESSION 1** **ESA / AeroCom welcome and dust**  
**tbd.** **10min** *ESA welcome*  
**M. Schulz** **20min** *AeroCom welcome*  
**H. Yu** **20min** *Simulated Trans-Atlantic Dust vs CALIPSO and ground data*  
**P. Ginoux** **10min** *Proposal: Anthropogenic dust experiment*
- 11:00 – 11:45** coffee-break (extended to **hang-up posters**)  
*chair: ???*
- 11:45 – 13:15** **SESSION 2** **vertical distribution**  
**R. Ferrare** **20min** *Comparisons of Airborne HSRL and Modeled Aerosol Profiles*  
**S. Schwarz** **10min** *Measurements of black carbon vertical profiles versus modeling*  
**M. Val Martin** **10min** *A fire emission plume injection height parameterization*  
**P.L. Ma** **10min** *Proposal: A New Aerosol Lidar Simulator for Climate Models*  
**P. Stier** **10min** *Satellite simulators for AeroCom exercises*  
*discussions*
- 13:15 – 14:30** lunch  
*chair: ???*
- 14:30 – 16:00** **SESSION 3** **biomass and nitrate**  
**M. Petrenko** **20min** *AeroCom Biomass Exp: Constraining emission with satellite data*  
**X. Liu** **20min** *Impacts of S. Afr wildfire aerosols on SE Atlantic stratocumulus*  
**H. Bian** **20min** *AeroCom Phase III Nitrate experiment: preliminary analysis*  
**F. Paulot** **10min** *Proposal: Sensitivity of nitrate aerosols to emissions/chemistry*  
*discussions*
- 16:00 – 16:30** coffee-break  
*chair: ???*
- 16:30 – 17:30** **SESSION 4** **other model-observation intercomparisons**  
**B. Andrews** **20min** *AeroCom INSITU: in-situ obs at surface vs model simulations*  
**M. Chin** **10min** *Results from AeroCom III/HTAP2 model experiments*  
**M. Chin** **10min** *Proposal of UTLS aerosol analysis*  
*discussions*
- 17:30 – 19:00** ESA sponsored **ICE-breaker** and **poster viewing**

chair: ???

8:45 – 10:45 poster introductions

short oral introduction of each poster  
(max 2 slides / max 2 minutes)

in alphabetic order

10:45 – 11:45 coffee-break + poster viewing

chair: ???

11:45 – 13.15 **SESSION 5 radiative forcing**

- B. Samset** 20min *Humidity: Comparisons to obs and radiative forcing impacts*
- P. Stier** 10min *Radiative Forcing WG & Exp. on Aerosol Effects on Convection*
- G. Myhre** 10min *AeroCom semi-direct aerosol effect intercomparison exercise*
- K. Carslaw** 10min *Proposal: statistical approach to quantify model uncertainty*
- L. Lee** 10min *Proposal: multi-model perturbed parameter ensemble (MMPPE)*

discussions

13:15 – 14:30 lunch

chair: ???

14:30 – 15:00 **T. Popp 20min ESA's aerosol CCI initiative**

15:00 – 16:00 poster viewing time / relax + coffee

chair: ???

16:00 – 17.30 **SESSION 6 indirect effects**

- M. Schulz** 10min *Control exercise to monitor model development*
- J. Quaas** 10min *The Aerosols-Clouds-Precipitation-and-Climate (ACPC) initiative*
- A. Gettelman** 20min *Tropospheric Volcanic Aerosols and Climate: impacts for testing*
- S. Ghan** 10min *update on indirect effect working group*

discussions

19:00 – dinner at Vecchia Frasca, Frascati



**Via G. Buttarelli, 12**

○ the circle ○ marks the location of the daily bus pick-up / drop off





**Wednesday, October 7, 2015**

**AerChemMIP**

chair: ???

- 8:30 - 9:00 **AerChemMIP registration and poster viewing**  
*(no fee will be collected for this day)*
  
- 9:00 - 10:20 **SESSION 7 AerChemMIP background**  

<b>ESA-official</b>	<i>welcome</i>
<b>V. Eyring</b>	<i>CMIP 6 goals and status</i>
<b>Schulz, Collins, Lamarque</b>	<i>overview of AerChemMIP</i>
<b>P. Forster</b>	<i>RFMIP</i>
  
- 10:00 - 11:00 **ALL** *discussions with AerChemMIP chairs*
  
- 11:00 - 11:30 coffee-break
  
- 11:30 - 12:15 **SESSION 8 emission (input)**  

<b>S.Smith</b>	<i>historical and future emissions</i>
<b>M.Hegglin</b>	<i>tropospheric and stratospheric ozone data</i>
  
- 12:15 - 12:45 **ALL** *needed model input - discussions with AerChemMIP chairs*
  
- 12:45 - 13:15 **SESSION 9 aerosol forcing fields (input)**  

<b>G.Myhre</b>	<i>AeroCom2 Model Median data-sets</i>
<b>S.Fiedler</b>	<i>Aerosol Plume climatology (MACv2-SP)</i>
  
- 13:20 - 14:30 lunch
  
- 14:30 - 15:30 **SESSION 10 AerChemMIP simulation plan**  
**ALL** *experiments and diagnostics - discussion with AerChemMIP chairs*
  
- 15:30 - 16:00 coffee
  
- 16:00 - 17:30 **SESSION 11 AerChemMIP science talks (12 +3 min)**  

<b>M. Bollasina</b>	<i>Atmospheric circulation as mediator of aerosol-driven climate impacts</i>
<b>C. Randles</b>	<i>MERRA Version 2: the Goddard aerosol reanalysis 1979 to present</i>
<b>A. Voulgarakis</b>	<i>Local and remote climate effects of regional pollutant emissions</i>
<b>K. Bowman</b>	<i>Emergent constraints in chemistry-climate interactions</i>
<b>T. Shepherd</b>	<i>The climate impact of changes in halocarbons and CO2 in tropical UTLS</i>
<b>C. Timmreck</b>	<i>Coordinated climate response for stratospheric aerosol</i>
  
- 17:30 - 19:00 **ESA sponsored ICE-breaker and poster viewing**

chair: ???

chair: ???



**Task:** Reflect on and Recommend an AeroCom work plan  
Produce a written recommendation at each AeroCom workshop on how to go on, Track and review progress in AeroCom working groups

**Members** – Appointed each year anew at AeroCom workshop

**Proposed** members

*Working group leaders, Model representatives, Co-Chairs*

*Nitrate Bian / BB Petrenko / Dust Balkanski / Microphysics Mann*

*Aerosol Cloud Interactions Ghan, Liu*

*Direct radiative forcing Myhre, Samset*

*GCMs Takemura CTMs Chin*

*COSP simulator Stier / Satellite data Kahn, Holzer-Popp*

*Aircraft simulator Schwarz, Stier, Chen*

*Surface data Ogren, Schulz / Co-chairs Schulz, Kinne, Chin*

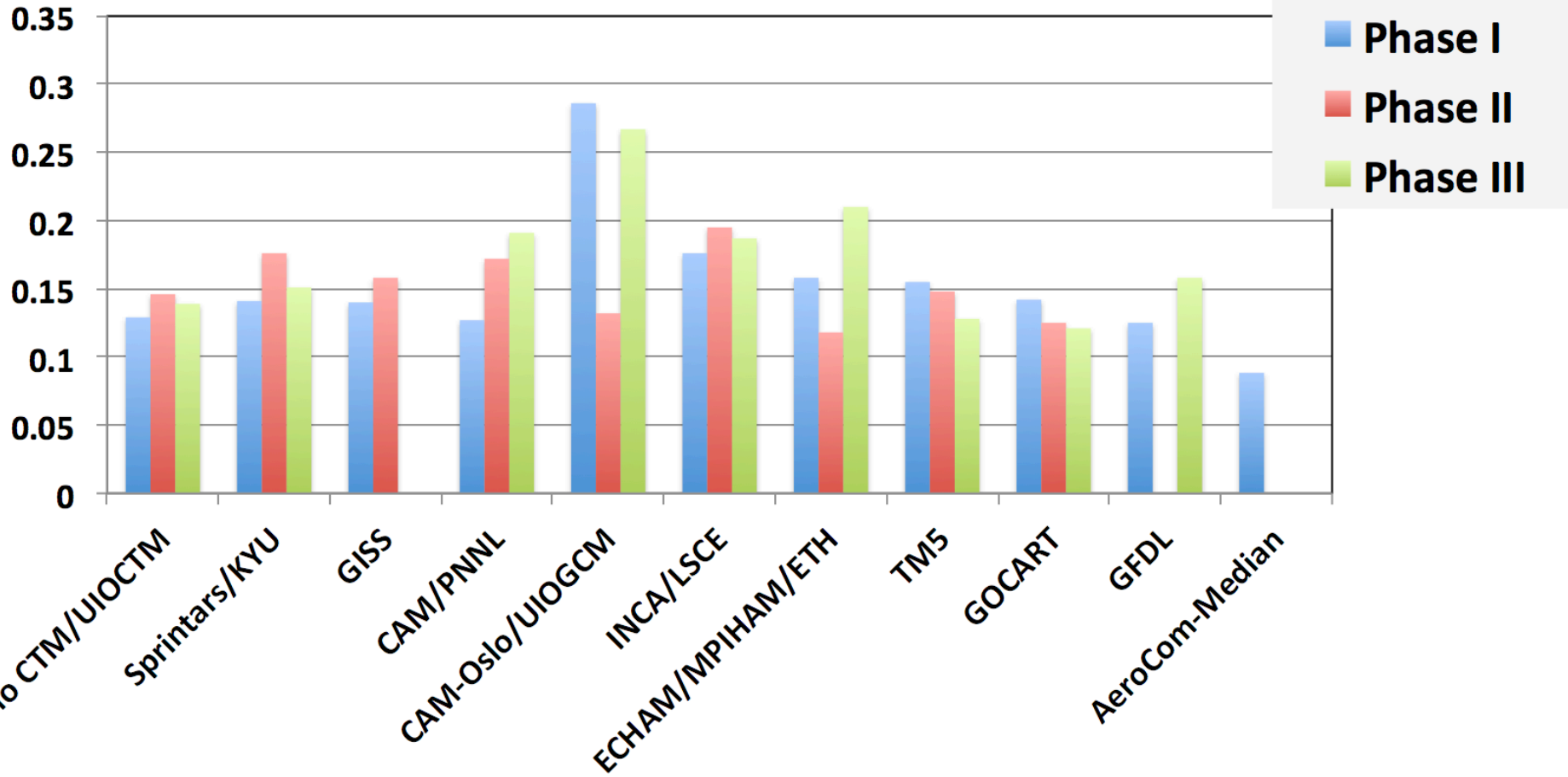




# Challenge: To improve (most) models



### RMS Model versus AOD from Aeronet (2000/2006/2010)





# The CTRL 2016 experiment



**Rewarding** the best OD550 performing **model team**  
With Two Bottles of Champagne (chinese and french)

## **Requirement :**

Simulation of daily AOD in 2010

and its speciation (BC, SO<sub>4</sub>, DUST, OA, SS, Rest)

Submission 15. September 2016

**Funding:** Crowdsourcing campaign soon to be launched

**Jury:** MMS+SSC



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AeroCom modellers and community



**Thanks for your attention !**