

# 11<sup>th</sup> AeroCom workshop    10-13 Sept. 2012    Seattle

hosts

Tom Ackerman    U of Wash., Seattle  
Steve Ghan        PNNL, Richland

## program

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**Sept 10, Monday am**

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**8:30- 9:00**

**Welcome / Registration / Logistics**

T. Ackerman / S. Ghan

**session 1    9:00- 10:30**

**AeroCom phase II analysis**

**9:00 – 9:30**

**General overview on activities**

M. Schulz

**9:30- 10:00**

**Radiative forcing of the direct aerosol effect from AeroCom Phase II simulations**

G. Myhre

**10:00 – 10.30 break**

**session 2a    10:30- 11:30**

**Aerosol indirect effects**

**10:30 – 10:50**

**Issues on simulating aerosol indirect effects**

J. Penner

**10:50 – 11:10**

**A simple model of global aerosol indirect forcing**

S. Ghan

**11:10 – 11:30**

**Model intercomparisons of aerosol effects on liquid and mixed cloud phases**

T. Storelvmo

**11:30 - 11:40**

**Evaluating aerosol indirect effects in climate models using COSP and satellite measurements"**

Susanne Bauer

**11:30 – 13:00** (*indirect*) **lunch**

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**Sept. 10, Monday pm**

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**session 2b 13:00- 14:00**

**13.00 – 13:20**

**Observational constraints on aerosol indirect effects and controlling processes**

R. Wood

**13:20 – 13.40**

**Constraining cloud lifetime effects of aerosols in global climate models using A-Train satellite and ground observations**

M. Wang

**13:40 – 14:00**

**discussions on exploring / evaluating indirect effects**

**14:00 – 14:20**

*short break*

**session 3 14:20 – 15:40**

**Concepts and Data for evaluations**

**14:20 – 14:40**

**Introduction to Collection 6 MODIS aerosol products**

R. Levy (remotely via SKYPE)

**14:40 – 15:00**

**Preparations for robust model evaluation using integrated aerosol observations**

C. Ichoku

**15:00 – 15:20**

**Steps towards an EOS-Era Aerosol Type Climatology**

R.Kahn

**15:20 – 15:40**

**The southern Ocean AOD maximum: MISR, MAN, and AERONET perspectives**

M. Witek

**15:40 – 16:00**      *short break*

**session 4**    **16:00 – 17:00**

**vertical distribution of aerosol**

**16:00 – 16:20**

**Black carbon aerosol vertical profiles repeatedly measured from the polar southern to the polar northern hemisphere**

J. Schwarz

**16:20 – 16:40**

**Comparisons of airborne HSRL and ECMWF Aerosol Profiles**

R. Ferrare

**16:40 – 16.50**

**What CALIPSO data tell us about vertical distribution in modeling**

M.Schulz (for B.Koffi)

**16:50 – 17:00**

**discussions on vertical distribution experiments**

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***Sept.11, Tuesday am***

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**session 5**    **8:30 – 10:00**

**Temporal Change**

**8:30 – 8:50**

**Aerosol decadal trends: In-situ measurements of number concentration and optical properties**

J. Ogren

**8:50 – 9:10**

**More than 10 years of SeaWiFS data reveal trends**

C. Hsu

**9:10 – 9:30**

**Multi-decadal variations of aerosols and possible impacts on surface radiation: Results from AeroCom II hindcast experiments and observations**

M. Chin

**9:30 – 9:50**

**Distributions and climate effects of atmospheric aerosols from 1850 to 2100 along Representative Concentration Pathways (RCPs) simulated by SPRINTARS**

T. Takemura

**9:50 – 10:00**

**discussions on hindcast simulations and data**

***10:00 – 10.30 break***

**session 6 10:30 – 11.30**

**ACCMIP and CMIP related activities**

**10:30 – 11:00**

**Impact of aerosol scheme, meteorology, and emissions on model skill in AeroCom and CMIP5 aerosol simulations**

N. Bellouin

**11.00 – 11:30**

**ACCMIP activities**

D. Shindell

***11:30 – 13:00 lunch***

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***Sept. 11, Tuesday pm***

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**13:00 – 13.10 official welcome**

U of Wash., Dean Graumlich

**13:10 – 14.00** Keynote talk

**"The science behind projections of forced climate change:  
Historical Basis, open questions and implications for policy makers"**

Bob Charlson

**14:00 – 22:00**

***common afternoon excursion and joint dinner***

ship for joint dinner leaves Seattle downtown harbor at 16:30

**Sept. 12, Wednesday am**

**session 7 8:30 – 9:20**

**Robustness of radiative forcing estimates**

**8:30 – 8:50**

**Intercomparison of shortwave radiative transfer schemes in global aerosol modeling: Results from the AeroCom Radiative Transfer Experiment**

C. Randles

**8:50 – 9:10**

**Host model uncertainties in aerosol radiative forcing estimates: Results from the AeroCom Prescribed Intercomparison Study**

P. Stier

**9:10 – 9:20 Discussions how to proceed (extended tests? more participants?)**

**9:20 – 9:50 break**

**session 8 9:50 – 11:10**

**Aerosol Radiative Forcing Results**

**9:50 – 10:10**

**Global Distribution of Aerosol and Aerosol Forcing from CALIOP Observations**

D. Winker

**10:10 – 10:30**

**Vertical profiles of aerosol radiative forcing - a comparison of AEROCOM phase 2 model submissions**

B. Samset

**10:30 – 10:50**

**Investigation of direct aerosol effect in cloud sky regions**

G. Myhre

**10:50 – 11:10**

**Direct aerosol radiative forcing based on combined A-Train observations and comparisons to IPCC-2007 results**

J. Redemann

session 9 11.15 - 12.00

**Poster presentations**

short 2 min summaries - no more than 2 ppt slides per poster  
all poster presenters

12.00 – 14.00 lunch and poster time 1

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Sept. 12, Wednesday pm

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session 10 14:00 – 15:00

**Parameterization and Uncertainties**

14:00 – 14:20

Numerical issues associated with strongly compensating processes in climate models: an example from ECHAM-HAM

H. Wan

14:20 – 14:40

Quantifying the sources of uncertainty in a global aerosol model

K. Carslaw

14:40 – 15:00

Aerosol water uptake in global aerosol models: dominant factors and their impacts on direct and indirect aerosol effect

K. Zhang

15:00 – 15:10 short discussions

15:10 – 15:30 short break

session 11 15:30 – 15:50

**organic aerosol**

15:50 – 16.10

Secondary Organic Aerosols in Global Modeling

D. Hegg

16:10 – 16:30

Activities by the organics sub-group

S. Bauer / K. Tsigaridis

16:30 – 16:40      short discussions

16:40 – 17:00      *short break*

session 12 17:00 – 18:00

**size, CCN and IN**

17:00 – 17:20

**An inter-comparison and evaluation of CCN and size distribution among AeroCom global aerosol models of a range of complexity**

G. Mann

17:20 – 17:40

**Measurements to identify and constrain sources of ocean-derived CCN**

P. Quinn

17:40 – 18:00

**Inter-comparison of aerosol indirect effect on cirrus (ice) clouds under AeroCom**

X. Liu

18:00 – 18:20

**Study of aerosol direct and first indirect radiative effects with GEOS-Chem-APM**

F. Yu

18:20 – 18:30      short discussions

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***Sept. 13, Thursday am***

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session 13 8:30 – 9:50

**Black carbon**

8:30 – 8:40

**Black Carbon: The official SAG definition**

J. Ogren

8:40 – 9:10

**The Black Carbon Assessment Report**

S. Doherty

**9:10 – 9:30**

**Comparing measurements with model derived Black Carbon and AAOD based upon AEROCOM, GFED, and Kalman Filter optimized BC emissions**

J. Cohen

**9:30 – 9:50**

**PM2.5 light absorbing carbon concentrations and filter-based light absorption measurements from major monitoring networks in the United States**

J. Hand

**9:50 – 10:10**

**Modeling Black Carbon over different regions Asia and Europe: influence of the emission inventory, of the model horizontal and vertical resolution**

Q. Liu

**10:10 – 11:30**

*break*

**and poster time 2**

**session 14 11:20 – 12:30**

### **Aerosol emission data**

**11:30 – 11:40**

**Historic emissions**

S. Kinne/ J.F. Lamarque / C. Granier

**11:40 – 11:50**

**AeroCom emissions – a brief update**

T. Diehl

**11:50 – 12:10**

**Emission databases for dust**

Y. Balkanski (with contributions from P.Ginoux)

**12:10 – 12:30**

**Use of satellite-measured aerosol optical depth to constrain biomass burning emissions source strength in the GOCART model**

M. Petrenko

**12.30 – 14.00**

**Wrap up of meeting**

**actions items**

**common experiments**

**sub-groups activities**

**meetings**



**publications**  
**review of discussions**  
**next meeting ... (Hamburg in Sept 2013 ?)**

**14.00 – 15.00**      *(late) lunch*

## **Posters**

Valentina Aquila, Modeling the stratospheric aerosol with a chemistry climate model: the example of Mt. Pinatubo

Valentina Aquila, Simulations for the Geoengineering Model Intercomparison Project

Susanne Bauer, Regional Impacts of Carbonaceous Aerosols, 1850-2100

Tommi Bergman, The Role of Amines in Atmospheric Aerosol Formation and Growth

Huisheng Bian, Atmospheric nitrate and its impact on air quality and climate constrained by measurements from ground stations, aircraft and satellite

Ken Carslaw, The number and mass size distributions of black carbon aerosol over Europe (Reddington)

Jan Griesfeller, Overview over the new aerocom infrastructure at met.no / Norway

Dongchul Kim, A multi-model comparison of dust aerosols and associated processes over Northern Africa and North Atlantic Ocean

Stefan Kinne, Aerosol direct radiative forcing: global distribution, uncertainties and anthropogenic development and trend

Alf Kirkevåg, NorESM in CMIP5: selected results with weight on climate response by aerosols vs. GHG.

Brigitte Koffi, An evaluation of the aerosol vertical distribution in global transport models through comparison against CALIOP layer products

Harri Kokkola, Aerosol direct radiative effect efficiency, aerosol optical properties and surface albedo - comparison between simulations of models and results derived with measurements (Huttunen)

Guangxing Lin, Anthropogenic emissions enhance the biogenic SOA formation and its radiative cooling effect

Anders V. Lindfors, Effective aerosol optical depth from pyranometer measurements of global solar radiation at Thessaloniki, Greece

Graham Mann, The complex response of Arctic CCN to sea-ice retreat (Browse).

Xiaohua Pan, The sensitivity of global aerosol simulations to two AeroCom phase II emission inventories

Steve Rumbold, Regional aerosol modeling over Europe using HadGEM3-R

Greg Schuster, Comparison of CALIPSO aerosol optical depth retrievals to AERONET measurements, and a climatology for the lidar ratio of dust

Tatsuya Seiki, Modeling of wet deposition process coupled with a double moment bulk cloud microphysics scheme

Sophie Vandembussche, Retrieval of desert dust vertical distribution from hyperspectral thermal infrared measurements by IASI

Rong Wang, Development of a new global black carbon emission inventory (PKU-BC), and implications for modeling and impacts on climate and health