



16th AeroCom workshop 5th AeroSAT workshop

October 9 – 13, 2017
FMI, Helsinki , Finland

hosts: Gerrit de Leeuw, Hannele Korhonen, Edith Rodriguez
Hannele.Korhonen@fmi.fi Edith.Rodriguez@fmi.fi

co-organizers (AeroCom): Michael Schulz / Stefan Kinne / Mian Chin
co-organizers (AeroSAT): Thomas Popp / Ralph Kahn

presentations

- **oral presentations** ... are allotted **20 or 15 min** ...but try to finish early
 - o to allow for 5 minutes of discussions
- **poster presentations** ... will be orally introduced by 1 (power point) slide
 - o all posters will hang from Tuesday to Friday

Sunday, October 8, 2017

arrival in town

poster authors *make sure that S. Kinne has your 1 slide ppt highlight summary of your poster*
please send your ppt slide (NOT pdf) to Stefan.Kinne@mpimet.mpg.de



Monday, October 9, 2017

AeroCom

8:00 – 9:00 AeroCom registration

9:00 – 10:30 **WELCOME**

Y. Viisanen

welcome

M. Kulmala

welcome

G. De Leeuw

logistics

M. Schulz

observations and modeling in AeroCom

T. Popp and R.Kahn

AeroSAT perspective on collaborations with modeling

10:30 – 11:00 coffee-break

chair: T. Popp

11:00 – 12.30 **SESSION 1 indirect**

11:00 – 11.20 **M. Christensen** *Cloud contamination in satellite products enhances the aerosol indirect forcing estimate*

11:20 – 11.40 **E. Gryspeerd** *Developing observational constraints of the aerosol influence on liquid water path*

11:40 – 12.00 **J. Muelmenstaedt** *Satellite-derived warm rain fraction as a constraint on the cloud lifetime effect*

12:00 – 12.20 **K. Zhang** *Towards process-level evaluation of aerosol effects on ice clouds in global aerosol-climate models*

12:20 – 13:20 lunch

13:20 – 15:00 **poster introductions (part 1)**

max 1 ppt slides / 1 minute poster introduction

*in alphabetic order
(of authors present)*

15:00 – 15:30 coffee-break

chair: H. Yu

SESSION 2 observational constraints

15:30 – 15:50 **M. Wild** *Assessment of clear sky solar radiative fluxes in climate models using surface observations*

15:50 – 16.10 **J. Redemann** *Combined A-Train aerosol observations to constrain direct aerosol radiative effects (DARE) in AeroCom models at different spatial and temporal averaging scales*

16:10 – 16.30 **S. Doherty** *ORACLES Overview*

16:30 – 16:50 **D. Watson-Parris** *Aerosol evaluation using a global synthesis of aircraft measurements*

16:50 – 17.00 **F. Malavelle** *remote sensing anomalies after the 2014-15 volcanic Holuhraun eruption*

17:00 – 17:15 short (smoke) break

chair: P. Stier

SESSION 3 how to constrain forcing uncertainty ?

17:15 – 17:35 **J. Quaas** *Constraints on aerosol forcing from the 20th century?*

17:35 - 18:30 **all** *open discussions*



Tuesday, October 10, 2017 AeroCom

chair: **H. Korhonen**

HEADLINE presentation

8:30 – 9:15 **H. Kokkola** *Finnish perspective on aerosol research*

chair: **M. Chin**

SESSION 4 components (1)

9:15 – 9:35 **H. Bian** *First look of atmospheric aerosol and CO using ATom measurements and GEOS5 model: introducing an ATom-AeroCom activity*

9:35 – 9:55 **Q. Tan** *Comparison of the vertical distribution of sulfur species in the AEROCOM-Phase II simulations*

9:55 – 10:10 **all** *discussions on components in modeling*

10:10 – 10:40 coffee-break and hang-up posters

chair: **H. Yu**

SESSION 5 components (2)

10:40 – 10:55 **S. Albani** *Integrating models and obs for better representations of the global dust*

10:55 – 11:10 **C. Chen** *A satellite view of global desert dust and primary carbonaceous aerosol emission database, 2006-2011*

11:10 – 11:25 **H. Yu** *Dust deposition into tropical Atlantic Ocean: An evaluation of GEOS model with satellite and aircraft observations*

11:25 – 11:40 **all** *discussions on dust in modeling*

chair: **P. Zieger**

SESSION 6 components (3)

11:45 – 12:00 **M. Burgos** *Evaluation/Improvement of parameterizations for aerosol hygroscopicity in global climate models using in-situ surface measurements*

12:00 – 12:15 **D. Neubauer** *Minimizing the effects of aerosol swelling and wet scavenging in ECHAM6-HAM2 for comparison to satellite data*

12:15 – 12:30 **all** *discussions on aerosol water and the hygroscopicity experiment*

12:30 – 13:30 lunch

chair: **M. Schulz**

SESSION 7 experiments (1) (10min, 5min discussions)

13:30 – 13:45 **M. Schulz** *overview on AeroCom experiments and (associated) diagnostics*

13:45 – 13:50 **M. Schulz** *AeroCom controlled model experiment*

14:00 – 14:10 **G. Myhre** *AeroCom historical aerosols*

14:15 – 14:25 **L. Lee** *The AeroCom Multi-Model Perturbed Physics Experiment (MMPPE)*

14:30 – 14:40 **M. Chin** *Aerosols in the upper troposphere and lower stratosphere (UTLS): Composition, origin, and convective transport of AeroCom3 / HTAP2*

14:45 – 14:55 **M. Chin** *Aerosol radiative effects through aerosol-cloud-radiation interactions (ACRI) in a changing climate – AeroCom model experiment / analyses*

15:00 – 16:00 extended coffee-break with poster viewing



chair: **M. Schulz**

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| | SESSION 8 | experiments (2) | (10min, 5min discussions) |
| 16:00 – 16.10 | R. Kahn | <i>AeroCom Biomass Burning Emissions Experiment: Satellite Constraints on Fire Emission Source Strength and Plume Injection Height</i> | |
| 16:15 – 16:25 | P. Ginoux | <i>COARSEMAP: synthesis of observations and models for coarse-mode aerosols</i> | |
| | | <i>Anthropogenic Dust Experiment</i> | |
| 16:30 – 16:40 | F. Malavelle | <i>Using the 2014-15 volcanic eruption at Holuhraun to investigate Aerosol-Cloud Interactions</i> | |
| 16:45 – 16:55 | D. Partridge | <i>Novel trajectory-based approach for evaluation of climate models against aerosol observations in a Lagrangian framework</i> | |
| 17:00 – 17:30 | all | <i>discussions on AeroCom experiments</i> | |

19:00 – conference dinner

Restaurant:

Kappeli

Address:

Eteläesplanadi 1.

Time:

19:00 - 22:00

Wednesday, October 11, 2017

AeroCom

chair: **G. De Leeuw**

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| | HEADLINE presentation | |
| 8:30 – 8:55 | P. Ginoux | <i>Preliminary results of Anthropogenic Dust Experiment</i> |

chair: **G. De Leeuw**

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| | SESSION 9 | remote sensing |
| 9:00 – 9:20 | A. Sayer | <i>new AVHRR, MODIS, and VIIRS aerosol products from Deep Blue</i> |
| | | <i>new observational constraints back before EOS era to the 1980s</i> |
| 9:20 – 9:40 | K. Suzuki | <i>Significance of cloud and precipitation processes in aerosol effects on climate</i> |
| 9:40 – 10:00 | D. Winker | <i>recent Improvements in CALIPSO Aerosol Products</i> |

10:00 – 10:20 (restroom / smoking) break

chair: **G. Myhre**

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| | SESSION 10 | forcing |
| 10:20 – 10.40 | N. Bellouin | <i>Copernicus Atmosphere Monitoring Service for Climate Forcings</i> |
| 10:40 – 11.00 | R. Allen | <i>An Increase in Aerosol Burden in a Warmer World</i> |
| 11:00 – 11.20 | T. Mielonen | <i>Does Increasing Temperature Increase Carbonaceous Aerosol Direct Radiative Effect over Forests?</i> |
| 11:20 – 11.30 | all | <i>discussions on radiative forcing</i> |

pick-up of your take-along lunch

11:45 **leaving FMI by public transport for the excursion** (by boat to an island off Helsinki)
<http://www.suomenlinna.fi/en/>

16:30 **back in town**



Thursday, October 12, 2017

AeroCom / AeroSAT

chair: M. Chin

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| 8:30 – 8:45 | SESSION 11 | AeroCom challenges | |
| | M. Schulz | <i>AeroCom wrap-up and outlook</i> | |
| 9:00 – 9:15 | SESSION 12 | data and modeling | |
| | M. Schulz | <i>lessons learned using satellite data, future needs and recommendations</i> | |
| 9:15 – 9:30 | N. Schutgens | <i>Aerosol optics comparisons between remote sensing and modeling</i> | |
| 9:30 – 9:45 | S. Kinne | <i>User case studies of Aerosol_cci – an overview</i> | |
| 9:45 – 10:00 | D. Rosenfeld | <i>CCN data from satellite retrievals and what can we do with them?</i> | |
| 10:00 – 10:15 | Y. Govaerts | <i>Aerosol_cci attempts on a joint aerosol-cloud products from SEVIRI</i> | |
| 10:15 – 10:45 | coffee-break | | |
| | | | <i>chair: L. Sogacheva</i> |
| | SESSION 13 | AeroSAT challenges | |
| 10:45 – 11:00 | R. Kahn | <i>new challenges for AeroSAT – remote sensing perspective</i> | |
| 11:00 – 11:15 | M. Chin | <i>new challenges for AeroSAT – global modeling perspective</i> | |
| 11:15 – 11:45 | all | <i>progress, needs, recommendations</i> | |
| 11:45 – 12:00 | poster introductions (part 2) | | |
| | max 1 ppt slides / 1 minute poster introduction | | <i>in alphabetic order</i> |
| | | | <i>(of those not present on Monday)</i> |
| 12:30 – 13:30 | lunch | | |
| | | | <i>chair: G. De Leeuw</i> |
| | SESSION 14 | working group on climate records (high-quality, long-term, consistent) | |
| 13:30 – 13:45 | G. DeLeeuw | <i>Introduction</i> | |
| 13:45 – 14:00 | T. Eck | <i>AERONET v3 update and including AERONET inversion uncertainties</i> | |
| 14:00 – 14:15 | E. Welton | <i>MPL data and uncertainties</i> | |
| 14:15 – 14:30 | G. Schuster | <i>Laboratory Evaluation of AERONET and GRASP Retrieval Algorithms</i> | |
| 14:30 – 15:00 | all | <i>experience with ground remote sensing references</i> | |
| 15:00 – 15:15 | all | <i>Other records (AVHRR, TOMS/OMI,) and next year's progress</i> | |
| 15:15 – 16:30 | coffee break + poster viewing | | |
| | | | <i>chair: R. Kahn</i> |
| | SESSION 15 | Working group on inter-comparisons | |
| 16:15 – 16:30 | R. Kahn | <i>overview & suggestions of AeroSAT experiments / inter-comparisons</i> | |
| 16:30 – 18:00 | all | discussion: | |
| | | o <i>What can be done best through AEROSAT experiments?</i> | |
| | | o <i>What are the goals, concepts, rules for such experiments?</i> | |
| | | o <i>Collecting ideas for experiments</i> | |
| | | o <i>What experiment results could be delivered by AeroSat 2018?</i> | |
| 18:00 ... | snack-drink evening (FMI-lobby, near the posters) | | |



Friday, October 13, 2017

AeroSAT

chair: N. Schutgens

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| | SESSION 16 | working group on aerosol typing | |
| 8:30 – 8:45 | L. Mona | <i>Overview of contributions by AeroSAT participants: definitions, inventory</i> | |
| 8:45 – 9:00 | O. Dubovik | <i>GRASP multi-purpose retrieval concept: strengths and limitations</i> | |
| 9:15 – 09:45 | all | <i>What progress in aerosol typing products and intra-product coordination can we expect by AeroSat 2018?</i> | |
| 9:45 – 10:15 | coffee-break | | |
| 10:15 – 10:45 | discussion continued | | |
| | | | <i>chair: N. Schutgens</i> |
| | SESSION 17 | evolving AEROSAT, collaboration with other initiatives | |
| 10:45 – 11:00 | O. Torres | <i>Short report on air quality session at CEOS-AC-VE meeting 6/2017 (remote)</i> | |
| 11:00 – 11:30 | all | <i>What specific AeroSat working group results and/or products should we aim to deliver to outside groups and initiatives?</i> | |
| 11:30 – 11:45 | A. Benedetti | <i>Short report on ICAP progress and possible data collaboration (remote)</i> | |
| 11:45 – 12:00 | discussion continued | | |
| 12:00 – 13:00 | lunch | | |
| | | | <i>chair: T. Popp</i> |
| | SESSION 18 | working group on pixel uncertainties | |
| 13:00 – 13:15 | T. Popp | <i>Overview with contributions collected from AEROSAT participants</i> | |
| 13:15 – 13:30 | K. Stebel | <i>What we have learned in validating Aerosol_cci pixel-level uncertainties?</i> | |
| 13:30 – 13:45 | A. Sayer | <i>Plan to outline a paper summarizing technique options and applicability</i> | |
| 13:45 – 15:00 | all | <i>What progress on defining and reporting AOD and aerosol-type pixel-level uncertainties can we expect by AeroSat 2018?</i> | |
| 15:00 – 15:30 | coffee break | | |
| | SESSION 19 | | |
| 15:30 – 16:00 | T. Popp / R. Kahn | <i>AeroSAT wrap-up and outlook</i> | |