



20th AeroCom workshop & 9th AeroSAT workshop

October 11 – 15, 2021

web-conference (access details will be sent by Oct 4 by email to registered participants)

time UTC 11:00 - 17:00 (see details below)

EU: 1pm - 7pm / NY: 7am - 1pm / CA: 4am - 10am / JP: 8pm - 2am / CN: 7pm - 1am

co-organizers (AeroCom): Michael Schulz / Stefan Kinne / Mian Chin / Kostas Tsigaridis / Bjørn Hallvard Samset /
Duncan Watson-Parris / Gunnar Myhre / Yve Balkanski

co-organizers (AeroSAT): Thomas Popp / Ralph Kahn / Larisa Sogacheva / Andy Sayer

presentations

- all presentations

... should be accessible prior to workshops

... so make sure you have sent your contribution by Oct 4.

... all times in the program are also given in UTC (please convert to your local time)

we request

- for orals

the complete talk

pdf format preferred

- for short orals

a 5-minute summary (max 5 slides)

pdf format preferred

- your contributions should be **e-mailed** to **stefan.kinne@mpimet.mpg.de** by **Oct 4 !**

(if files are larger than the e-mail permitted size, please upload on anonymous ftp

ftp.zmaw.de, cd incoming, mkdir aerocom, cd aerocom, mput 'file', send Stefan a note)

- **upload naming convention for files:**

AA2021_session#_order#_lastname/initial.pdf session # [oral: from O1, O2 ... O9, O10, short oral: S1 to S5]

order # [as listed in the program below]

- o *examples:* AA2021_SO3_4_PoppT.pdf the 4th element in the short oral session3 by T.Popp
AA2021_O1_4_ChinM.pdf the 4th element in the oral session1 by M.Chin

webex-links and board.net link for discussion will be sent out by e-mail to registered participants by Oct 4

webex-links will open 30 min before the start of each session

pdfs will be available to participants on an ftp site:

ftp-projects.zmaw.de/aerocom/virtual2021/*



Day 1

Monday, October 11, 2021

UTC: 11:30-12:00 **webex testing**

EU:1:30–2:00pm/NY:7:30–8:00am/CA:4:30–5:00am/JP:8:30pm–9:00pm/CN:7:30–8:00pm

getting ready session, test your network connection

(for problems: e-mail tom.l.kucsera@nasa.gov)

UTC: 12:00-14:00

AeroCom

EU:2:00–4:00pm/NY:8:00–10:00am/CA:5:00–7:00am/JP:9:00pm–11:00pm/CN:8:00–10:00pm

Session **O1** Oral session **AeroCom1**

Moderator: **Stefan Kinne** // Rapporteur: **tbd**

1 12:00 Schulz, Michael

AeroCom introduction

2 12:20 Watson-Parris, Duncan

Ongoing AeroCom experiment update

3 12:40 Kim, Dongchul

Assessment of dust source attribution to the global land and ocean regions

4 12:55 Chin, Mian

Progress and results of the AeroCom UTLS+ACAM experiment

5 13:10 Gryspeerd, Edward

Planning a new indirect effect experiment

- **13:25 Discussions**

15 min break

UTC: 14:00-16:00

AeroCom

EU:4:00–6:00pm/NY:10:00am–noon/CA:7:00–9:00am/JP:11:00pm–1:00am/CN:10:00pm–midn.

Session **O2** Oral session **AeroCom2**

Moderator: **Kostas Tsigaridis** // Rapporteur: **Maggie DeLessio**

1 14:00 Pan, Xiaohua

Update on AeroCom Biomass Burning Emission Injection Height experiment

2 14:15 Sand, Maria

Aerosol absorption in global models from AeroCom Phase III

3 14:30 Su, Wenying

Understanding top-of-atmosphere flux bias in the AeroCom Phase III models

4 14:45 Yu, Hongbin

Updates on Trans-Atlantic Dust Deposition (TADD) analysis of AeroCom III

5 15:00 Ahsan, Hazma

An Overview of Preliminary Results from Emissions-MIP

- **15:15 Discussions**

15 min break

UTC: 16:00-17:00

EU:6:00–7:00pm/NY:noon–1:00pm/CA:9:00–10:00am/JP:1:00am–2:00am/CN:midn–1:00am

Time slot for working groups / chat on the web



Day 2

Tuesday, October 12, 2021

UTC: 11:00-12:00

AeroCom

EU:1:00–2:00pm/NY:7:00–8:00am/CA:4:00–5:00am/JP:8:00pm–9:00pm/CN:7:00–8:00pm

Session **SO1 short oral session**

Aerosol trends and forcing

Moderator: Philip Stier

1 11:00 Brühl, Christoph

Radiative forcing by stratospheric aerosol from 1990 to 2020 using a chem. climate model and a volcanic emission inventory based on vertically resolved satellite obs.

2 11:07 Kinne, Stefan

Aerosol (radiative forcing) trends with MODIS data

3 11:14 Skeie, Ragnhild

Changes in aerosol atmospheric composition and radiative forcing in OsloCTM3 over the past decade – the effect of the updated CEDS emission inventory

4 11:21 Song, Qianqian

Deriving Size-Resolved Dust Direct Radiative Effect Efficiency from a Satellite-based Decadal Dust Optical Thickness Climatology

5 11:28 Zhang, Zhibo

A preliminary study of the impacts of mixing state on the scattering properties and direct radiative effects of dust particles

6 11:35 van Diedenhoven, Bastiaan

Improved CCN estimation through the retrieval of aerosol water fraction, hygroscopicity and dry size distribution using multi-angle polarimetry

15 min break

UTC: 12:00-14:15

AeroCom

EU:2:00–4:15pm/NY:8:00–10:15am/CA:5:00–7:15am/JP:9:00pm–11:15pm/CN:8:00–10:15pm

Session **O3 Oral session**

CMIP6

Moderator: Gunnar Myhre // Rapporteur: tbd

1 12:00 Vaishali Naik

Aerosol research findings and needs arising from IPCC AR6

2 12:20 Olivie, Dirk

Comparing impact of CMIP5 vs CMIP6 aerosol/precursor emissions in NorESM2

3 12:35 Allen, Robert

Impact of near-term climate forcer mitigation on the AMOC

4 12:50 Schulz, Michael

Aerosol findings from AerChemMIP experiments

5 13:05 Mott, Andrea

Community Emissions Data Systems (CEDS): Emissions to 2020

6 13:20 Vogel, Annika

Assessment of present-day estimates of AOD from recent AeroCom and CMIP phases against multiple satellite products and global reanalyses

- 13:35 Discussions

15 min break

UTC: 14:15-16:00

AeroCom / AeroSAT

EU:4:15–6:00pm/NY10:15am–noon/CA:7:15–9:00am/JP:11:15pm–1:00am/CN:15:00pm–midn.

Session **O4 oral session**

Dust

Moderator: Yves Balkanski // Rapporteur: tbd

1 14:15 Green, Robert

Earth surface mineral dust source investigations

2 14:35 Levy, Rob

Comparing assumptions for dust optical properties in various Goddard-based retrieval algorithms



3 14:50 Kok, Jasper
4 15:05 Colarco, Peter

*Contrib. of the world's main dust source regions to the global cycle of desert dust
A Review of the Treatment of Dust Optical Properties in Earth System Modeling*

- 15:20 Discussions
15 min break

UTC: 16:00-17:00

AeroCom / AeroSAT

EU:6:00–7:00pm/NY:noon–1:00pm/CA:9:00-10:00am/JP:+1:00am–+2:00am/CN:+00:00–+1:00am

Session **SO2 short oral session**

Sub-orbital/error analysis

Moderator: Michael Schulz

1 16:00 Ferrare, Richard

Airborne High Spectral Resolution Lidar-2 Measurements of Aerosol Distributions and Properties during the NASA CAMP2Ex Mission

2 16:07 Eck, Thomas

Measurements of biomass burning aerosol optical and physical properties from the extreme forest fires in California/Oregon in September 2020: aged versus fresh smoke

3 16:15 Andrews, Betsy

Systematic relationships between $f(RH)$ and other aerosol optical properties

4 16:22 Schmeisser, Lauren

Updates on the AeroCom INSITU Project: Using In-situ Surface Measurements of Aerosol Optical Properties to Evaluate Model Simulations

5 16:30 Herrera, Milagros

Rigorous dynamic error estimates provided by GRASP algorithm in diverse remote sensing applications: concept and validation.

Day 3

Wednesday, October 13, 2021

UTC: 11:00-12:30

AeroCom / AeroSAT

EU:1:00–2:30pm/NY:7:00–8:30am/CA:4:00–5:30am/JP:8:00pm–9:30pm/CN:7:00–8:30pm

Session **O5 oral session**

Aerosol-Cloud Interactions

Moderator: Duncan Watson-Parris // R: tbd

1 11:00 Gryspeerd, Edward

Sampling strategies for cloud droplet number concentration in satellite data

2 11:15 Regayre, Leighton

Constraining aerosol forcing uncertainty using satellite data

3 11:30 Sorooshian, Armin

ACTIVATE: Strategy and First Results

4 11:45 Khlestova, Julia

Cloud condensation nuclei reduction impact over Moscow during spring 2020 lockdown on the cloud characteristics (simulations and measurements)

5 12:00 Jia, Hailing

Significant underestimation of radiative forcing by aerosol–cloud interactions derived from satellite-based methods

- 12:15 Discussions (evidence by region and season of secondary effects of lifetime and precipitation)

15 min break

UTC: 13:00-15:00

AeroCom / AeroSAT

EU:3:00–5:00pm/NY:9:00–11:00am/CA:6:00–8:00am/JP:10:00pm–midn./CN:9:00–11:00pm

Session **X fun activities !!!**



UTC: 15:00-17:00

AeroCom / AeroSAT

EU:5:00-7:00pm/NY:11:00am-1:00pm/CA:8:00-10:00am/JP:midn.-2:00am/CN:11:00pm-1:00am

Session **O6 oral session**

Processes Moderator: Mian Chin // Rapporteur: Sampa Das

1 15:00 Bian, Huisheng

Obs. constrained analysis of sulfur species in the marine troposphere

2 15:15 DeLessio, Meagan

Modeling atmospheric brown carbon in the GISS ModelE Earth system model

3 15:30 Neubauer, David

Climate impacts of aviation aerosol emissions

4 15:45 Torres, Omar

Temporal evolution of the stratospheric aerosol load from the Canadian 2017 and Australian 2020 pyroCb events

5 16:00 Yu, Pengfei

Persistent stratospheric warming due to 2019-20 Australian wildfire smoke

6 16:15 Zhang, Kai

The representation of natural aerosols and its impact on eff. aerosol forcing

- **16:30 Discussions** (observational evidence/relationships to constrain processes in modeling)

Day 4

Thursday, October 14, 2021

UTC: 11:00-12:00

AeroCom / AeroSAT

EU:1:00-2:00pm/NY:7:00-8:00am/CA:4:00-5:00am/JP:8:00pm-9:00pm/CN:7:00-8:00pm

Session **SO3 short oral session**

Constraining aerosol properties and types

Moderator: Hongbin Yu

1 11:00 Cuesta, Juan

Type-discriminated aerosol concentration profile derived from the ACCP spaceborne lidar multispectral measurements

2 11:07 Herreras, Marcos

Enhanced Aerosol Component Retrieval Using Visible and Thermal Infrared Spectrum

3 11:14 Kim, Dongchul

Multi-model comparison of dust optical depth at 10 μ m over the Northern Atlantic

4 11:21 Popp, Thomas

Uncertainty-weighted ensemble products for (Dust) AOD

5 11:28 Gasso, Santiago

An overview of modern dust activity in South America based on satellite observations

6 11:35 Moseid, Kine

Lifetime of BC affected by intermodel differences in particle ageing

15 min break

UTC: 12:00-15:00

AeroCom / AeroSAT

EU:2:00-5:00pm/NY:8:00-11:00am/CA:5:00-8:00am/JP:9:00pm-midn./CN:8:00-11:00pm

Session **O7 oral session**

Constrain

Moderator: Thomas Popp // Rapporteur: Linlu Mei

1 12:00 Balkanski, Yves

AeroCom-AeroSat Commission on Constraining Aerosol Properties

2 12:15 Schuster, Greg

Tables of Aerosol Optics (TAO)

3 12:30 Kahn, Ralph

Systematic sub-orbital aircraft measurements (SAM-CAAM)

- **12:45 Discussions** (priorities, add. needs)

15 min break



- 4 13:30 Schutgens, Nick Model evaluation with satellite data of AAOD and SSA
 5 13:45 Sayer, Andrew All-sky vs. clear-sky AOD and the problem of partial cloudiness when comparing model and satellite aerosol fields
 6 14:00 Tsikerdekis, Athanasios Aerosol data assimilation as a tool to detect model errors
- 14:15 Discussions (integration of model and data, best practices)
 15 min break

UTC: 15:00-16:00

AeroCom / AeroSAT

EU:5:00-6:00pm/NY11:00am-noon/CA:8:00-9:00am/JP:12:00pm-1:00am/CN:11:00pm-midn.

- Session **O8 oral session** **trends** **Moderator: Andy Sayer // Rapporteur: Antti Lipponen**
 1 15:00 Quaas, Johannes Aerosol trends since 2000 and aerosol ERF
 2 15:15 Mielonen, Tero Comp. aerosol type time series in a climate model and a satellite retrieval

- 15:30 Discussions (trends, Covid, natural events)
 15 min break

UTC: 16:00-17:00

AeroCom / AeroSAT

EU:6:00-7:00pm/NY:noon-1:00pm/CA:9:00-10:00am/JP:1:00am-2:00am/CN:midn-1:00am

- Session **SO4 short oral session** **Assimilations and Modeling** **Moderator: Peter Colarco**
 1 16:00 Chimot, Julien *The new Copernicus Sentinel-3 NRT Aerosol - towards homogenized quality over Land*
 2 16:07 Benedetti, Angela *Assimilation of MODIS reflectance in the ECMWF/CAMS 4D-Var*
 3 16:14 Lipponen, Antti *Deep Learning Based Post-Process Correction of the Aerosol Parameters in the High-Resolution Sentinel-3 Level-2 Synergy Product*
 4 16:21 Miinalainen, Tuuli *Correcting ECHAM-HAMMOZ derived PM2.5 conc. with statistical downscaling*
 5 16:28 Zhong, Qirui *Models underestimate emitted particle sizes + misrepresent wet dep. for biomass burning*
 6 16:35 Acharya, Asutosh *The regional northern hemispheric carbonaceous aerosols and the global monsoon*
 7 16:42 Quaas, Johannes *AtmoDat model data standard*



Day5

Friday, October 15, 2021

UTC: 11:00-13:00

AeroSAT

EU:1:00–3:00pm/NY:7:00–9:00am/CA:4:00–6:00am/JP:8:00–10:00pm/CN:7:00–9:00pm

Session **O9 oral session**

Aerosat/Geo

Moderator: Larisa Sogacheva // Rapporteur: Adam Povey

1 11:00 Robbins, Daniel

Improving Differentiation of Cloud and Extreme Smoke Plumes in Himawari-8 Scenes

2 11:15 Espinosa, Reed

A synergistic multipixel retrieval of aerosol properties from geostat. satellite obs.

3 11:30 Mei, Linlu

Above cloud aerosol properties retrieved from the XBAER algorithm

4 11:45 Winker, Dave

Upcoming CALIOP Data Product Release

- **12:00 Discussions** (added info from active, geo and passive combined sensors)

15 min break

UTC: 13:00-14:00

AeroSAT

EU:3:00–4:00pm/NY:9:00–10:00am/CA:6:00–7:00am/JP:10:00–11:00pm/CN:9:00–10:00pm

Session **SO5 short oral session New Retrievals**

Moderator: Greg Schuster

1 13:00 Levy, Rob

Update on the GEO-LEO 'Dark Target' aerosol project

2 13:05 Povey, Adam

Updating quality control in the Optimal Retrieval of Aerosol and Cloud (ORAC)

3 13:10 Jafariserajehlou, Soheila

Release of the new Polar Multi-sensor Aerosol product (PMAp) version 2.2

4 13:15 Luffarelli, Marta

Combined Aerosol and Cloud optical thickness from SLSTR observations

5 13:20 Narayan, Kanishka

Evaluation of SO₂ emissions from the OMI point source catalog

6 13:25 Litvinov, Pavel

Surface and aerosol characterization from S5P/TROPOMI using GRASP algorithm: new possibilities, validation and expected performance

7 13:30 Dubovik, Oleg

Sentinel-3A/OLCI aerosol and surface retrieval based on the GRASP algorithm: product development and preliminary evaluation

15 min break

UTC: 14:00-16:00

AeroSAT / AeroCom

EU:4:00–6:00pm/NY10:00am–noon/CA:7:00–9:00am/JP:11:00pm–1:00am/CN:10:00pm–midn.

Session **O10 oral session**

AerosatAQ

Moderator: Ralph Kahn // Rapporteur: tbd

1 14:00 Martin, Randall

Overview/ status of satellite based AQ

2 14:15 Garrigues, Sebastian

Assimilation of multiple satellite aerosol optical depth (AOD) near real time (NRT) products in the Copernicus Atmospheric Monitoring Service (CAMS) data assimilation system

- **14:30 Discussions** (Air Quality is the hot top for aerosol in the future, as radiative forcing has maxed)

3 15:00 Schulz, Michael

AeroCom outlook (including feedback from rapporteurs)

4 15:20 Popp, Thomas

AeroSat outlook (including feedback from rapporteurs)