



# 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](mailto: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](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/\\*](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](mailto: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: **tbd**

**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 Dierenhoven, 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 Kok, Jasper**

*Contrib. of the world's main dust source regions to the global cycle of desert dust*



3 14:50 Levy, Rob

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

4 15:05 Colarco, Peter

*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: Duncan Watson-Parris**

1 16:00 Ferrare, Richard

*Airborne High Spectral Resolution Lidar-2 Measurements of Aerosol Distributions and Properties during the NASA CAMSO2Ex 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: Michael Schulz // Rapporteur: 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: tbd**

**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  $\mu$ 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:2:00-4:00pm/NY:8:00-10:00am/CA:5:00-7:00am/JP:9:00pm-11:00pm/CN:8:00-10:00pm

**Session O7 oral session**

**Constrain**

**Moderator: Thomas Popp // Rapporteur: tbd**

**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: tbd**

**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)

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 PM<sub>2.5</sub> conc. with statistical downscaling*

**5 16:28 Zhong, Qirui**

*Models underestimate emitted particle sizes + misrepresent wet deposition 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: tbd**

**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 SO<sub>2</sub> 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 Chen, Cheng**

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)

**4 15:00 Schulz, Michael**

AeroCom outlook (including feedback from rapporteurs)

**5 15:20 Popp, Thomas**

AeroSat outlook (including feedback from rapporteurs)