



19th AeroCom workshop

8th AeroSAT workshop

October 12 – 16, 2020

web-conference (access details will be sent in week 41 by email)

Three 90 minute sessions every day

EU: 2pm - 7pm / NY: 8am - 1pm / CA : 5am - 10am / JP: 9pm - 2am / CN : 8pm - 1am

host: Kostas Tsigaridis (Columbia Univ. NY)

kostas.tsigaridis@columbia.edu

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

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

presentations

- **all presentations (plenary and breakout)** ... should be accessible prior to workshops

for **all contributions** (plenary and breakout) **we request by October 2**

- **the complete talk** *ppt or pdf (or mp4) formats preferred*
- **1 introductory slide** (title/main result/your_picture) *pdf format preferred*

- your contributions should be e-mailed **before October 2** to **stefan.kinne@mpimet.mpg.de**
(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:**
- AA2020_sessionnumber_lastname&initial_talk.pdf +AA2020_sessionnumber_lastname&initial_slide.pdf
- **examples** AA2020_05_GettelmanA_talk.pdf and AA2020_05_GettelmanA_slide .pdf
(in case of several presentations add '1', '2', ... before '.pdf')



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Day 1 **Monday, October 12, 2020**

EU:2:00–3:30pm/NY:8:00–9:30am/CA:5:00–6:30am/JP:9:00pm–10:30pm/CN:8:00–9:30pm

Plenary Session 1 - Experiment Status [90 min]

*purpose: get an overview per AeroCom experiment of submissions, analysis, papers, participants, plans
Intro then 12 invited talks à 5 minutes then 10 min discussion (further discussion in breakout 1)*

Moderator: Stier

Rapporteur: TBA by moderator

- **Schulz**: Welcome and AeroCom **Overview** [20 min]

AeroCom Experiment Status Summaries

- **Gliss**, - **Mortier**, - **Burgos**, - **Chin**, - **KimD**, - **YuH**, - **Myhre**, - **Pan**, - **Su**, - **Sand**, - **Watson-Parris**, - **KimP** (5 min each)
[60min]

- **Discussion of status** [10 min]

15 minutes break

EU:3:45–5:15pm/NY:9:45–11:15am/CA:6:45–8:15am/JP:10:45pm–0:15am/CN:9:45–11:15pm

Plenary Session 2 - Aerosol and component life cycle diversity [90 min]

*focus on: remaining issue, recommendations for modelling, evaluation issues, proposed AeroCom activities
5 invited talks 5 minutes + 12 minutes discussion*

Moderator: Chin

Rapporteur: TBA by moderator

- **Schulz** aerosol life cycle

- **Yu,H** Dust lifetime and size

- **Sand** BC and absorption

- **Bian** Nitrate

- **Tsigaridis** Organics

15 minutes break

EU:5:30–7pm/NY:11:30am–1pm/CA:8:30–10am/JP:00:30am–02am/CN:11:30pm–1am

Plenary Session 3 - Aerosol optical properties [90 min]

*focus on: remaining issue, recommendations for modelling, evaluation issues, proposed AeroCom activities
4 invited talks 5 minutes + 17 minutes discussion*

Moderator: Samset

Rapporteur: TBA by moderator

- **Chin** Vertical profiles

- **Colarco** biomass burning, ageing and brown carbon

- **Gliss** Mass extinction coefficient / AE / fine-mode AOD / coarse-mode AOD

- **Burgos** Hygroscopicity plus size



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Day 2 **Tuesday, October 13, 2020**

EU:2:00–3:30pm/NY:8:00–9:30am/CA:5:00–6:30am/JP:9:00pm–10:30pm/CN:8:00–9:30pm

Plenary Session 4 - new modeling results (90 min)

6 invited talks 12 minutes + 3 minutes discussion (further discussion and posters in breakout 2)

Moderator: Kinne

Rapporteur: TBA by moderator

- **Balkanski:** Aerosol absorption: how dust absorption causes Sahel precipitation
- **Ryder:** Aircraft observations of Coarse Dust: Radiative Significance and Model Evaluation
- **Neubauer:** Soot aging by ozone/sulfuric acid enhances future warming and reduces shortwave aerosol cooling by changing cloud formation
- **Herbert:** Understanding the Asian summer monsoon response to a future dipole in aerosol emissions across India and China using an intermediate-complexity GCM
- **Bruehl:** Model simulations of the Pinatubo volcanic eruption: direct and indirect effects on stratospheric chemistry and dynamics
- **ZhangK:** Intercomparison of aerosol microphysics parameterizations in the MAM aerosol box model

15 minutes break

EU:3:45–5:15pm/NY:9:45–11:15am/CA:6:45–8:15am/JP:10:45pm–0:15am/CN:9:45–11:15pm

Plenary Session 5 - new activities and link to ESMs/CMIP6 [90 min]

7 invited talks 10 minutes / 3 minutes discussion (further discussion in breakout 3)

Moderator: Watson-Parris

Rapporteur: TBA by moderator

- **Gettelman:** Natural Laboratories for Aerosol Cloud Interactions- Simulating Aerosol Cloud Precipitation and Climate interactions (ACPC)
- **Tsigaridis:** US aerosol coding initiative
- **Yu,F:** Use of machine learning to improve global models on aerosol-cloud interactions without compromising their computing efficiency
- **Nabat:** Evaluation of aerosol absorption in CMIP6 simulations
- **Samset:** Aerosol absorption in CMIP6 and its implications for projected precipitations
- **Winker:** An update on the NASA_Cloud_Convection_precipitation study
- **Riipinen:** EU FORCES project

15 minutes break

EU:5:30–7pm/NY:11:30am–1pm/CA:8:30–10am/JP:00:30am–02am/CN:11:30pm–1am

Introduction and Breakout Discussion Session A [90 min]

covering ca 30 contributions (format see below)

- **1. Introduction** (plenary) **1 page introductions** (1 min each) [30min]
- **2. breakout** (in subgroups): **discussions in 3 parallel sessions** [60 min] breakout sessions 1-3 see split file

Moderators: Stier, Kinne, Watson-Parris (plus rapporteurs tba by moderators)



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Day 3 **Wednesday, October 14, 2020**

EU:2:00–3:30pm/NY:8:00–9:30am/CA:5:00–6:30am/JP:9:00pm–10:30pm/CN:8:00–9:30pm

Plenary Session 6 - Covid impact on aerosol loads, air quality and forcing [90 min]

one slide by moderator with main issues + key questions / 5 min presentations of recent work further breakout 4

Moderator: Tsigaridis

Rapporteur: TBA by moderator

- **Quaas:** Assessing aviation-induced cirrus from satellite during COVID-19 (5 min)
- **Bellouin:** Impact of Chinese Covid-19 lockdown on aerosol and radiative fluxes over East Asia Seas (5 min)
- **Kondragunta:** China and Taiwan: A Tale of Two COVID-19 Lockdown Measures and Air Quality (5 min)
- **Liu:** Impacts of COVID-19 on Aerosol Direct and Indirect Radiative Forcing (5 min)
- **Skeie:** Changes in aerosol composition and radiative forcing due to COVID-19 in OsloCTM3 (5 min)
- **Mortier:** COVID-19: Impact on AOD and European Air Quality (5 min)
- **Tsyro:** Impacts of COVID-19 lockdown on European air quality (5 min)

Discussion 60 (min): What have we learnt so far from the Covid-19 natural experiment?

Best practices to analyze the various data of such an exceptional situation against the long-term background

15 minutes break

EU:3:45–5:15pm/NY:9:45–11:15am/CA:6:45–8:15am/JP:10:45pm–0:15am/CN:9:45–11:15pm

Plenary Session 7 - indirect effects and observational constrains [90min]

one slide by moderator with main issues + key questions / five 10 min presentations / further discussion breakout 5

Moderator: Quaas

Rapporteur: Gryspeerd

1 slide by moderator with main issues + key questions

- **Zuidema:** Oracles overview [10min]
- **Gryspeerd:** Indirect effect - Identifying observational constraints (10min)
- **Toll:** constraint on cloud water response to aerosols (10min)
- **Hasekamp:** Retrieval of Cloud Condensation Nuclei to Quantify Radiative Forcing due to ACI (10 min)
- **Lufarelli:** Aerosol retrieval in presence of clouds (10 min)

Discussion (40 min): Ways forward to better constrain aerosol-cloud effects with observations

15 minutes break

EU:5:30–7pm/NY:11:30am–1pm/CA:8:30–10am/JP:00:30am–02am/CN:11:30pm–1am

Introduction and Breakout Discussion Session B [90 min]

covering ca 30 contributions (format see below)

- **1. Introduction** (plenary) **1 page introductions** (1 min each) [30min]
- **2. breakout** (in subgroups): **discussions in 3 parallel sessions** [60 min] sessions 4-6 see breakout split file

Moderators: Tsigaridis, Quaas, Sayer (plus rapporteurs tba by moderators)

Icebreaker mingling probably on yotribe.com / Details will be sent around before meeting



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Day4 **Thursday, October 15, 2020**

EU:2:00–3:30pm/NY:8:00–9:30am/CA:5:00–6:30am/JP:9:00pm–10:30pm/CN:8:00– 9:30pm

Plenary Session 8 - compare model and satellite data: treating clouds, derived trends [90min]

one slide by moderator with main issues + key questions / 4 presentations / further discussion breakout 6

Moderator: Sayer

Rapporteur: Sogacheva

- **Myhre** Historical forcing and trends [20min]
- **Kramer**: Observed aerosol forcing trends over the A-Train satellite era (7 min)
- **Schutgens**: An AEROCOM/AEROSAT study: evaluation of global models with satellite AOD and SSA (7 min)
- **Garrigues**: AOD monitoring within the CAMS data assimilation (7 min)

Discussion (50 min): Best practices to integrate information from satellites and modeling

What are conditions of high / low consistency within satellite data / modeling and between both?

Development priorities to improve on some of them

Best way to compare different products and resolve differences for data assimilation

15 minutes break

EU:3:45–5:15pm/NY:9:45–11:15am/CA:6:45–8:15am/JP:10:45pm–0:15am/CN:9:45–11:15pm

Plenary Session 9 - Spectral dependence of AOD / constraining aerosol type [90 min]

one slide by moderator with main issues + key questions / 3 presentations / further discussion breakout 7

Moderator: Popp

Rapporteur: TBA by moderator

- **Tsigaridis / Mona**: Simulating instrumentally-defined aerosol type(10min)
- **Mielonen**: Comparing aerosol types in climate models and satellite retrievals (5 min)
- **Sogacheva**: Comparisons of satellite AOD at multiple wavelengths (5 min)

Discussion (70 min): How can we progress on constraining aerosol type with satellite observations?

How can satellite AOD at multiple wavelengths be used in modeling?

How far can satellite interpretation schemes for aerosol type be applied to models?

15 minutes break

EU:5:30–7pm/NY:11:30am–1pm/CA:8:30–10am/JP:00:30am–02am/CN:11:30pm–1am

Introduction and Breakout Discussion Session C [90 min]

covering ca 30 contributions (format see below)

- **1. Introduction** (plenary) **1 page introductions** (1 min each) [30min]
- **2. breakout** (in subgroups): **discussions in 3 parallel sessions** [60 min] sessions 7-9 see breakout split file

Moderators: Popp, Kahn/Sogacheva, Povey (plus rapporteurs tba by moderators)



AeroSAT

Day5

Friday, October 16, 2020

EU:2:00–3:30pm/NY:8:00–9:30am/CA:5:00–6:30am/JP:9:00pm–10:30pm/CN:8:00– 9:30pm

Plenary Session 10 - breakout-group summaries days 2-4 [50 min]

Rapporteurs [12*4min]

Plenary Session 11 – requirements “new OPAC” (‘a-priori choices’) in-situ / lab meas. [40min]

one slide by moderator with main issues + key questions / further discussion breakout 8

Moderator: Kahn

Rapporteur: TBA by moderator

- **ACTRIS representative (Di Biagio):** Update on lab experiments, how to define new experiments (5 min)

Discussion (35 min): concrete requirements for “new OPAC”

15 minutes break

EU:3:45–5:15pm/NY:9:45–11:15am/CA:6:45–8:15am/JP:10:45pm–0:15am/CN:9:45–11:15pm

Plenary Session 12 - new retrievals: strengths, limitations, new developments [90min]

one slide by moderator with main issues + key questions / further discussion breakout 9

Moderator: Povey

Rapporteur: TBA by moderator

- **Levy:** GEO-LEO synergy of different groups (5 min)

- **Seidel:** “Beyond AOD”, quantify vertically resolved aerosol absorption (5 min)

- **Dubovik:** Assessment of multi-angular polarimetry potential (5 min)

- **Fougnie:** How consider the geometry of acquisition on the aerosol retrieval performance (5 min)

- **Knobelspiesse:** Analysis of simultaneous aerosol / ocean glint retrieval using multiangle observations (5 min)

Discussion (65 min) Most promising breakthrough potentials to improve aerosol retrieval information?

15 minutes break

EU:5:30–7pm/NY:11:30am–1pm/CA:8:30–10am/JP:00:30am–02am/CN:11:30pm–1am

Plenary Session 13 - recent extreme events [40min]

One slide by moderator with main issues + key questions / further discussion breakout 8

Moderator: Sogacheva

Rapporteur: TBA by moderator

- **Sayer:** How consistent are satellite retrievals of smoke from the 2019-2020 Australian fires? (5 min)

- **Yu,H:** Gigantic African Dust Intrusion into the Caribbean Basin and southern U.S. in June 2020 (5 min)

Discussion (30 min): How improve representation of extreme events with limited sampling in extreme events?

Session 14 - closing remarks [20min]

- **Popp** AeroSAT

- **Schulz** AeroCom



Introduction and Breakout Discussion Session Format

- **1. Introduction** (plenary) **1 page introductions** (1 min each) [30min]
- **2. breakout** (in subgroups): **discussions split up in 4 parallel sessions** [60 min]

For better preparation of discussions during the sessions and the breakouts full presentations and 1 page summaries should be made available for all presentations (**posters and selected orals**) and should be uploaded for access well **prior to the workshop / October 2.**

for **all contributions** (for **ALL** requested orals or posters) **we request by October 2**

- **the complete talk** (for a 10 minute presentation) *ppt or pdf (or mp4) formats preferred*
- **1 introductory slide** (title/main result/your_picture) *pdf format preferred*

upload procedure:

your contributions should be sent **before October 2** to stefan.kinne@mpimet.mpg.de
(if files are larger than the e-mail permitted size, please upload on ftp
ftp.zmaw.de, cd incoming, mkdir aerocom, cd aerocom, mput 'file', send Stefan a note of arrival)

Upload naming convention for files:

- AA2020_sessionnumber_lastname&initial_talk.pdf +AA2020_sessionnumber_lastname&initial_slide.pdf
- **examples** *AA2020_05_Gettelmana_talk.pdf and AA2020_05_Gettelmana_slide .pdf*
(in case of several presentations add '1', '2', ... before '.pdf')

upload access

All received presentations will be placed on anonymous ftp
and will be available for download 7 days before the workshop start
In the following subdirectory
<ftp://ftp-projects.zmaw.de/aerocom/meetings/ny2020>

discussion session procedure:

- Presentations will be bundled by topic in breakout sessions session
in discussion sessions on Tue, Wed and Thu
- after a 1 slide introduction of all presentations for a selected day discussion breakouts are opened
- Moderators for each breakout room/session are assigned
- Contributions in each breakout room will be discussed in a preset order
- Links to each break out room will be sent to all workshop participants prior to the workshop
- All participants can enter and participate in all breakout sessions, however,
presenters are asked to remain/stay in their assigned breakout room (to input/answers)
chats, discussions, questions, replies are kept with board.net online tool
- technical instructions will come ca October 7