



Autumn (AC)³ General Assembly (GA)

21th – 23th November, 2022

Klimahaus Bremerhaven,
Am Längengrad 8, 27568 Bremerhaven, Germany

Agenda PART I - Science

Scientific session talks will have a length of 15 min + 5 min discussion, whereas the CCA overview talks will have a length of 20 min + 10 min discussion. (AC)³ is going to cover all coffee and lunch breaks during the conference and non-alcoholic drinks and food during dinner via the central project Z01. Child care would be covered by (AC)³ Gender funds.

Meeting Zoom link: <https://tinyurl.com/3pz694nk>

MONDAY, 21 November 2022

13:30 *Welcome*

13:40 – 15:00 Scientific Session I (Room Kyoto) – Aerosol particles in the Arctic
Chair: Zerlina Hofmann (AWI-B)

- 13:40 – 14:00 **Sebastian Zeppenfeld (TROPOS):**
"Marine Carbohydrates in the Arctic – From the Ocean to the Atmosphere"
- 14:00 – 14:20 **Moritz Zeising (AWI-B):**
"Organic aerosol precursors from the Arctic Ocean - coupled ecosystem ocean modelling compared to in-situ and satellite observations"
- 14:20 – 14:40 **Ansibel Leon (TROPOS):**
"Modelling the impact of primary marine organic aerosol on clouds"
- 14:40 – 15:00 **Zsofia Juranyi, hybrid format (AWI-B):**
"Black Carbon properties in the Arctic from a decade of spring and summertime aircraft measurements"



15:00 – 15:30 *Coffee break*

15:30– 17:00 CCA Breakout Sessions — in parallel

15:30 – 16:15 CCA 1 (Room Kyoto) & CCA 4 (Room Bali)

16:15 – 17:00 CCA 2 (Room Kyoto) & CCA 3 (Room Bali)

18:00 – 19:00 *Dinner (Finger food)*

19:00 – 20:00 Evening Talk by Helene and Thomas Hoffmann from the Cryosity project on "Art and Science"

TUESDAY, 22 November 2022

09:00 – 10:00 Scientific Session II (Room Kyoto) – Satellite observations & clouds
Chair: Nina Maherndl (UNI-L)

09:00 – 09:20 **Carola Barrientos-Velasco** (*Tropos*):

"Cloud Radiative Effect during MOSAiC based on Polarstern and CERES observations"

09:20 – 09:40 **Imke Schirmacher** (*UNI-K*):

"Does CloudSat over- or underestimate Arctic low level cloud occurrences from airborne remote sensing observations?"

09:40 – 10:00 **Kamesh Vinjamuri** (*Uni-B*):

"Arctic Cloud optical properties observed from space"

10:00 – 12:00 Poster Session I (Room Bali)

Posters according to list

10:30 – 11:00 *Coffee break (parallel to poster session)*

12:00 – 13:00 *Lunch break*



13:00 – 14:10 **Scientific Session III (Room Kyoto) – Atmospheric Radiation & Turbulence**

Chair: Giovanni Chellini (UNI-K)

13:00 – 13:30 **CCA 2 – Christof Lüpkes (AWI-B):**

“Near-Surface processes”

13:30 – 13:50 **Michael Lonardi (UNI-L):**

“Tethered balloon-borne measurements in the cloudy ABL: Overview and first results”

13:50 – 14:10 **Hannes Griesche (TROPOS):**

“Low-level Arctic clouds can stay under the radar – Challenging determination of their impact on the surface radiation budget”

14:10 – 15:00 **Scientific Session IV (Room Kyoto) – Air mass properties & transport**

Chair: Melanie Lauer (UNI-K)

14:10 – 14:40 **CCA 4 – Benjamin Kirbus (UNI-L):**

“Air mass transport and transformation”

14:40 – 15:00 **Bianca Zilker (UNI-B):**

“Investigation of weather conditions and BrO during ozone depletion events between 2010 and 2021 in Ny-Ålesund”

15:00 – 15:30 *Coffee break*

15:30 – 16:30 **Scientific Session V (Room Kyoto) – Sea Ice**

Chair: Hannah Niehaus (UNI-B)

15:30 – 15:50 **Janna Rückert (UNI-B) & Andreas Walbröl (UNI-K):**

“Recent atmospheric and sea ice insights from Polarstern expedition PS131 in the Marginal Sea Ice Zone”

15:50 – 16:10 **Ran Tao (AWI-B):**

“Availability and variability of light under the Arctic sea ice

16:10 – 16:30 **Alexander Mchedlishvili (UNI-B):**

“Pan-Arctic Sea Ice-Atmosphere Drag Coefficients Derived from ICESat-2 Topography Data”



16:30 – 17:00 CCA 1 – Olivia Linke (UNI-L):
"Collaborative (AC)³ results on the lapse-rate feedback"

17:00 – 17:10 Equal Opportunity Board report 2022 (Room Kyoto)
Rosa Gierens (UNI-K)

WEDNESDAY, 23 November 2022

09:00 – 11:00 Poster Session II (Room Bali)
Posters according to list

10:30 – 11:00 *Coffee break (parallel)*

11:00 – 12:10 Scientific Session VI (Room Kyoto) – Cloud process studies
Chair: Imke Schirmacher (UNI-K)

11:00 – 11:30 CCA 3 – Vera Schemann (UNI-K):
"Arctic mixed-phase clouds"

11:30 – 11:50 Nina Maherndl (UNI-L):
"Observations of riming in arctic mixed-phase clouds during HALO-(AC)³"

11:50 – 12:10 Giovanni Chellini (Uni-K):
"Does turbulence enhance ice-particle growth by aggregation and riming in Arctic low-level mixed-phase clouds? Observational evidence from Ny-Alesund"

12:10 – 12:30 Closing PART I (Room Kyoto) – Manfred Wendisch

12:30 – 14:00 *Lunch break*



Poster Session I

- #01 E. Akansu et al. (A02): **Determining Atmospheric Boundary Layer Height in Polar Night Using Tethered Balloon-Borne Data from MOSAiC**
- #02 L. Aue et al. (D03): **New Insights into Cyclone Impacts on Sea Ice in the Atlantic Sector of the Arctic Ocean in Winter**
- #03 A. Walbröl et al. (B05): **Combining a low with a high frequency microwave radiometer to retrieve atmospheric water vapour and liquid water path**
- #04 J. Hachmeister et al. (associated): **Trend analysis of XCH₄ in the Arctic**
- #05 F. Heukamp et al. (D04): **Control of Varying Atmospheric Forcing Mechanisms on the Barents Sea Atlantic Water Inflow**
- #06 M. Klingebiel et al. (B03): **Airborne Remote Sensing Measurements of Liquid-Phase Cloud Properties over the Open and Sea Ice-Covered Arctic Ocean**
- #07 M. Lauer et al. (E04): **Influence of Atmospheric Rivers and associated weather systems on precipitation in the Arctic**
- #08 L. Mei et al. (B01/B02): **Tropospheric aerosol optical thickness trend above the ocean in the Arctic during 1981-2020**
- #09 J. Michaelis et al. (A03): **Turbulence measurements during HALO-(AC)³ and AFLUX in the atmospheric boundary layer over the Arctic MIZ**
- #10 H. Niehaus et al. (C01): **Melt Pond Fractions in the Arctic from Different Perspectives**
- #11 N. Risse et al. (associated): **Evaluation of TELSEM2 using observed sea ice emissivities up to 340 GHz in preparation for the Ice Cloud Imager (ICI)**
- #12 P. Saavedra Garfías (B07): **Studying the Influence of Sea Ice Lead Fraction on Wintertime Cloud Macro- and Microphysical Properties During the MOSAiC**
- #13 M. Schäfer et al. (A03): **First Analysis and Potential of Thermal Infrared Imagery measured with VELOX during HALO-(AC)³**
- #14 N. Schnierstein et al. (A01): **A year in LES: Standardized daily high-resolution Large Eddy Simulations of the Arctic boundary layer during the MOSAiC drift**
- #15 B. Basudev et al. (B02): **Spring and summertime aerosol optical depth variability over Arctic snow and ice from space-borne observations and GEOS-Chem 3-D model simulations.**
- #16 S. Tiedeck et al. (E04): **Atmospheric River during MOSAiC in Mid-November 2019: Transformation Processes and Impact on the Surface Energy Budget**
- #17 G. Wallentin et al. (associated): **Sensitivity Studies on Arctic Multilayer Clouds**



Poster Session II

- #18 S. Becker et al. (A03): Airborne measurements of the surface cloud radiative effect in the Fram Strait during different conditions
- #19 K. Ebell et al. (E02): Multi-year precipitation characteristics based on in-situ and remote sensing observations at the Arctic research site Ny-Ålesund, Svalbard
- #20 L. Heizmann et al. (associated): Water vapour profile retrieval over Ny-Ålesund (Svalbard) using Fourier transform emission spectroscopy
- #21 Z. Hofmann et al. (C04): Subduction as Observed at a Submesoscale Front in the Marginal Ice Zone in Fram Strait
- #22 I. Höschel et al. (D01): Influence of variations in sea ice concentration on Arctic climate in an ensemble of idealized simulations with ICON
- #23 E. Jäkel et al. (C01): Performance of the revised surface albedo scheme of HIRHAM-NAOSIM
- #24 D. Ji et al. (E02): Ground-based remote sensing of aerosol properties using high resolution infrared emission and Lidar observations in the high Arctic
- #25 B. Kirbus et al. (associated): Airborne observation of air mass transformations during HALO-(AC)3
- #26 T. Kiszler et al. (E03): Studying the representation of macro- and microphysical cloud properties at Ny-Ålesund in ICON-LEM
- #27 W. Körtke et al. (C04): Circulation Changes in the Atlantic Water derived from Transient Tracers in the Arctic Ocean
- #28 C. Lüpkes et al. (A03): A package of momentum and heat transfer coefficients for the stable atmospheric surface layer
- #29 S. Mehrdad et al. (D01): Sensitivity of Arctic large-scale circulation to regional radiative forcing over Europe using Deep Learning
- #30 P. Echevarria et al. (B01/B02): Satellite Cloud fraction over the polar regions on artificial intelligence Methods
- #31 M. Moser et al. (associated): In-situ measurements of low-level clouds over the sea ice and the open ocean in the Arctic during spring and summer
- #32 H. Müller et al. (associated): Representation of Arctic mixed-phase clouds in ECMWF forecasts during ALOUD
- #33 J. Röttenbacher et al. (associated): Radiative Effect of Arctic Cirrus - Observations and Modelling



(AC)³ Planning Meeting for phase III

23th – 25th November, 2022

Klimahaus Bremerhaven, Room Kyoto
Am Längengrad 8, 27568 Bremerhaven, Germany

Agenda PART II – Planning Meeting for PIs (and Postdocs)

For each project there will be a time slot of 10 min for a short presentation according to the distributed template ahead. All slides (pdf) will be collected before the meeting. Presentations should include a specific hypothesis with detailed scientific questions, used methods, milestones, and collaborations, as well as a confirmation (or adjustment) of proposed project funding. Please be referred to funding overview provided before the meeting. Slides should be the basis for pre-proposal which is due on 1 Dec 2022. After each Cluster there will be 15 min available for Cluster discussions.

WEDNESDAY, 23 November 2022

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|---------------|---|
| 14:00 – 15:30 | <u>General part of the proposal</u> – Manfred Wendisch
General strategy, overview on finished and new projects, Cluster structure and CCAs |
| 15:30 – 16:00 | <i>Coffee break</i> |
| 16:00 – 17:00 | <u>CCA 2 in phase III – Surface processes</u> |
| 19:00 | <i>Joint Dinner at Villa Seebeck, Deichstraße 15, 27568 Bremerhaven (self-payer)</i> |



THURSDAY, 24 November 2022

09:00 – 10:15 Cluster E

- 09:00 – 09:10 E01 – PLs Neggers, Quaas
- 09:10 – 09:20 E02 – PLs Dahlke, Ebell, Notholt
- 09:20 – 09:30 E03 – PLs Schemann, Schnitt
- 09:30 – 09:40 E04 – PLs Crewell, Rinke
- 09:40 – 09:50 E05 – PLs Kalesse-Los, Maahn
- 09:50 – 10:00 E06 – PLs Bösch, Quaas
- 10:00 – 10:15 Cluster E discussion – *Susanne Crewell*

10:15 – 10:45 *Coffee break*

10:45 – 11:30 Cluster A

- 10:45 – 10:55 A01 – PLs Macke, Neggers
- 10:55 – 11:05 A02 – PLs Siebert, Wendisch
- 11:05 – 11:15 A03 – PLs Herber, Schäfer
- 11:15 – 11:30 Cluster A discussion – *André Ehrlich*

11:30 – 12:35 Cluster B

- 11:30 – 11:40 B01 – PLs Burrows, Vountas
- 11:40 – 11:50 B02 – PLs Bösch, Vountas
- 11:50 – 12:00 B03 – PLs Crewell, Ehrlich, Deneke
- 12:00 – 12:10 B04 – PLs Herber, van Pinxteren, Pöhlker
- 12:10 – 12:20 B05 – PLs Ebell, Spreen
- 12:20 – 12:35 Cluster B discussion – *Andreas Macke & Gunnar Spreen*

12:35 – 13:30 *Lunch break*

13:30 – 14:15 Cluster C

- 13:30 – 13:40 C01 – PLs Jäkel, Nicolaus, Spreen
- 13:40 – 13:50 C03 – PLs Bracher, Richter
- 13:50 – 14:00 C04 – PLs Kanzow, Walter
- 14:00 – 14:15 Cluster C discussion – *Astrid Bracher*



14:15 – 15:00 Cluster Z

14:15 – 14:30 Z04 – PLs Handorf, Quaas, Schemann
14:30 – 15:00 INF – PL Buschmann

15:00 – 15:30 *Coffee break*

15:30 – 16:35 Cluster D

15:30 – 15:40 D01 – PLs Handorf, Jacobi, Quaas
15:40 – 15:50 D02 – PLs Heinold, Kretzschmar
15:50 – 16:00 D03 – PLs Rinke, Spreen
16:00 – 16:10 D04 – PLs Kanzow, Salzmann
16:10 – 16:20 D06 – PL Kretschmer
16:20 – 16:35 Cluster D discussion – *Annette Rinke*

16:35 – 17:35 CCA 1 in phase III – Lapse rate feedback

FRIDAY, 25 November 2022

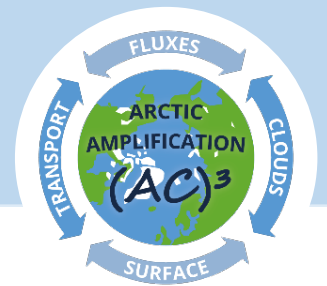
09:00 – 10:00 CCA 3 in phase III – Arctic mixed-phase clouds

10:00 – 11:00 CCA 4 in phase III – Air mass transformation & transport

11:00 – 11:30 Closing

11:30 – 12:00 *Coffee break & snacks*

12:00 End of meeting



(AC)³ PhD Workshops & Retreat connected to the fall General Assembly 2022

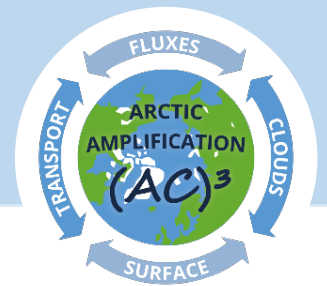
23 – 25 November 2022

Klimahaus Bremerhaven, Room Bali
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Agenda PART II – PhD workshops

WEDNESDAY, 23 November 2022

- 14:00** Workshop on 'Science Communication'
*Led by Adam Polczyk,
Press and Communications department, University of Cologne*
- 14:00 Theory (introduction and best practise)
- 15:30 *Coffee break*
- 16:00 Hands-on (exercises, own examples)
- 18:00** End of Workshop
- 19:00 *Joint Dinner at Villa Seebeck, Deichstraße 15, 27568 Bremerhaven (self-payer)*



THURSDAY, 24 November 2022

- 9:00** Workshop on 'Getting there – Career Development for Natural Scientists'
*Led by Dr. Juliane Handschuh,
Soft Skill Trainer for Scientists*
- Assess your current situation, including your skills and capabilities, personal set of values and interests.
 - Develop a precise career development plan including SMART career goals. Project management techniques are applied to plan and manage a successful career.
 - Successfully achieve your career goals and develop your individual future.
- 10:15 *Coffee break*
- 12:30 *Lunch break*
- 15:00 *Coffee break*
- 17:00** End of Workshop

FRIDAY, 25 November 2022

- 9:00** Open Space event
- self-organized discussion rounds with different conversations
 - Topics collected in advance and on-site
 - Scientific or non-scientific
 - poster to document output of discussions
- 11:30 *Coffee break & snacks*
- 12:00** End of event