



1st (AC)³ Science Conference on Arctic Amplification

March 26th – 28th, 2017

University of Bremen, Institute for Environmental Physics (IUP),
Otto-Hahn-Allee 1, 28359 Bremen

Agenda

SUNDAY, 26 March (Café Unique)

18:00 – 22:00 Ice Breaker

MONDAY, 27 March (IUP Bremen, HS2)

- 08:00 – 08:45 *Registration desk*
- 08:45 – 09:00 Opening of the conference (M. Wendisch)
- 09:00 – 10:30 **Session A** (Chairs: C. Lüpkes, M. Wendisch)
- 09:00 – 09:30 Keynote talk by **Von P. Walden** (*Washington State University*)
“The importance of surface energy fluxes in the Arctic: From sea ice to the top of Greenland”
- 09:30 – 09:50 **Dmitry Chechin et al.** (*AWI-Bremerhaven*)
“Atmospheric boundary layer evolution and associated low-level baroclinicity during cold-air outbreaks in the Arctic”
- 09:50 – 10:10 **Christof Lüpkes et al.** (*AWI-Bremerhaven*)
“A new bulk parametrization of surface fluxes for stable atmospheric conditions over sea ice”
- 10:10 – 10:30 **Felix Lauermann et al.** (*University of Leipzig*)
“Meter-scale horizontal variability of the cloud top radiative cooling derived from airborne spectral imaging over Arctic stratocumulus”
- 10:30 – 11:00 *Coffee break*

11:00 – 12:30	<u>Session B</u> (Chairs: A. Macke, J. Notholt)
11:00 – 11:30	Keynote talk by Jost Heintzenberg (<i>Stockholm University</i>) “Water vapor, aerosols, and clouds in the Arctic”
11:30 – 11:45	Elena Ruiz Donoso et al. (<i>University of Leipzig</i>) „Cloud thermodynamic phase discrimination over snow surfaces using passive solar remote sensing“
11:45 – 12:00	Sebastian Zeppenfeld et al. (<i>TROPOS</i>) „Method development and first measurements of marine biopolymers and ice nucleating particles for the application in Arctic field samples“
12:00 – 12:15	Linlu Mei et al. (<i>University of Bremen</i>) “Retrieval of aerosol optical thickness from passive remote sensing over the Arctic region”
12:15 – 12:30	Ana Radovan et al. (<i>University of Cologne</i>) “Microwave brightness temperatures simulations at AMSU-B frequencies for a polar low case on 7 th of January 2009”
12:30 – 13:30	<i>Lunch (Cafeteria)</i>
13:30 – 15:00	<u>Session C</u> (Chairs: J. P. Burrows, A. Bracher)
13:30 – 14:00	Keynote talk by Ulrich Platt (<i>Ruprecht-Karls-University Heidelberg</i>) “Halogen chemistry in the polar boundary layer – The roles of meteorology, surface, and aerosol”
14:00 – 14:20	Tobias Donth et al. (<i>University of Leipzig</i>) “Sensitivity of the surface albedo on micro- and macrophysical snow properties including Black Carbon”
14:20 – 14:40	Astrid Bracher et al. (<i>AWI-Bremerhaven</i>) “Investigating variability and trend of three major phytoplankton groups during the period of rapid change based on modelling and satellite retrievals”
14:40 – 15:00	Christine Pohl et al. (<i>University of Bremen</i>) “Influence of varying opening angle and spectral bandwidth on bidirectional reflectance factors”
15:00 – 15:30	<i>Coffee break</i>
15:30 – 18:00	<u>Poster session A – C</u> (see table below)

- 20:00 – 23:00** **Evening talk and reception (Haus der Wissenschaften, Olberssaal) – Closed event**
- 20:00 – 20:30** Evening talk by **Sebastian Gerland** (*Norwegian Polar Institute*)
“Changing Arctic sea ice implications for climate, ecosystem and society”
- 20:30 – 23:00** Reception (drinks and finger food)

TUESDAY, 28 March (IUP Bremen, HS2)

- 08:30 – 09:00** *Registration desk*
- 09:00 – 10:30** **Session D** (Chairs: A. Rinke, J. Quaas)
- 09:00 – 09:30** Keynote talk by **Dave Bromwich** (*Ohio State University*)
“Arctic system reanalysis of Arctic atmospheric circulation”
- 09:30 – 09:45** **Ralf Jaiser et al.** (*AWI-Potsdam*)
“The linkage between Arctic sea ice changes and mid-latitude atmospheric circulation in reanalysis data and model simulations- Tropo-stratospheric coupling and barotropic interactions”
- 09:45 – 10:00** **Philip Rostosky et al.** (*University of Bremen*)
“Snow depth retrieval on Arctic sea ice from satellite radiometers – extension to lower frequencies”
- 10:00 – 10:15** **Rodrigo Caballero et al.** (*University of Stockholm*)
“Warming the Arctic with moist intrusions”
- 10:15 – 10:30** **Jacob Schacht et al.** (*TROPOS*)
“Aerosol as a player in the Arctic Amplification – An aerosol-climate model evaluation study”
- 10:30 – 11:00** *Coffee break*
- 11:00 – 12:30** **Session E** (Chairs: S. Crewell, M. Maturilli)
- 11:00 – 11:30** Keynote talk by **Irina Gorodetskaya** (*University of Aveiro*)
“Clouds and precipitation in the polar regions: Integration and synthesis of observations and regional climate models”
- 11:30 – 11:45** **Kerstin Ebell et al.** (*University of Cologne*)
„Large Eddy Simulations at Ny-Ålesund with ICON-LEM“
- 11:45 – 12:00** **Sandro Dahlke et al.** (*AWI-Potsdam*)
„Origin and characteristics of lower-tropospheric air masses above Ny-Ålesund during different flow conditions”

12:00 – 12:15	<i>Karoline Block et al. (University of Leipzig)</i> “Analysis of feedback uncertainties contributing to the spread in Arctic warming amplification”
12:15 – 12:30	<i>Rosa Gierens et al. (University of Cologne)</i> “Investigating mixed phase clouds using a synergy of ground based remote sensing measurement”
12:30 – 13:30	<i>Lunch (Cafeteria)</i>
13:30 – 15:00	<u>Poster session D – E</u> (see table below)
15:00 – 15:30	<i>Coffee break</i>
15:30 – 17:30	General Assembly of (AC)³, internal SAB meeting (in parallel)
15:30 – 16:00	Report of Speaker and Scientific Coordinator
16:00 – 17:00	Introduction of new members, to be elected.
16:00 – 16:15	<i>Astrid Lampert</i> (TU Braunschweig)
16:15 – 16:30	<i>Emma Järvinen</i> (KIT)
16:30 – 16:45	<i>Johannes Schneider</i> (MPIC)
16:45 – 17:00	Awarding of the “(AC) ³ Distinguished Young Investigators Prize”
17:00	End of Conference

Additional Arctic related lectures

WEDNESDAY, 29 March (IUP Bremen, HS2)

- 09:00 – 13:00** **General, introductory lectures** (*mainly for PhD students but interested audience and discussants are also welcome*)
- 09:00 – 10:00** Lecture by **Von P. Walden** (*Washington State University*)
“Physical characteristics and basic features of Arctic climate”
- 10:15 – 11:15** Lecture by **Dave Bromwich** (*Ohio State University*)
“Contemporary climate change in the Arctic”
- 11:35 – 12:30** Lecture by **Irina Gorodetskaya** (*University of Aveiro*)
“Antarctic and Arctic climate systems: Similarities and contrasts”

Poster Session A – C:

1. **Water mass modification processes and water transport into the Arctic, R. Gerdes**
2. **Chemical composition of aerosol particles in the Arctic summer – Anthropogenic and biogenic influences, F. Köllner, J. Schneider, H. Bozem, P. Hoor, M. Willis, J. Burkart, W. R. Leaitch, A. Herber, J. Abbatt, S. Borrmann**
3. **Investigation of the Directional Structure of Horizontal Cloud Inhomogeneities Derived from Ground-Based and Airborne Spectral Imaging and Cloud Resolving Models, M. Schäfer, E. Bierwirth, A. Ehrlich, E. Jäkel, K. Loewe, F. Werner, C. Hoose, M. Wendisch**
4. **Balloon-borne vertical turbulence profiles: Measurement setup and exemplary data, U. Egerer, H. Siebert, M. Wendisch**
5. **Ship-based Studies of AOD in the Norwegian and Greenland Seas between 2007 and 2016 within the NASA-MAN Project, T. Zielinski, P. Makuch, T. Petelski, P. Pakszys, P. Markuszewski, A. Smirnov, R. Neuber, Ch. Ritter**
6. **Quantification of uncertainties on cloud radiative forcing caused by surface heterogeneity, E. Jäkel, A. Ehrlich, M. Wendisch, G. Heygster, L. Istomina, C. Pohl**
7. **In Situ Measurements of Cloud Radiative Cooling and Heating Rates, J. Stapf, F. Lauermann, M. Gottschalk, A. Ehrlich, M. Wendisch**
8. **Microphysical and chemical characterization of cloud particle residues from Arctic mixed-phase clouds sampled during the coming ACLOUD mission, S. Mertes, U. Kästner, D. van Pinxteren, A. Macke, O. Eppers, J. Schneider, H.-C. Clemen, F. Köllner, M. Zanatta, D. Kalmbach, A. Herber**
9. **Changes of Top-of-Atmosphere reflectance over the Arctic from spaceborne measurements, T. Stamoulis, M. Vountas, L. Lelli, L. Mei, V.V. Rozanov, J.P. Burrows**
10. **Investigating variability and trend of three major phytoplankton groups during the period of rapid change based on modeling and satellite retrievals, S. N. Losa, S. Hellmann, M. A. Soppa, T. Dinter, J. Oelker, M. Losch, S. Dutkiewicz, A. Richter, V. Rozanov, J. P. Burrows, A. Bracher**
11. **Cloud masking for aerosol retrieval over the Arctic using AATSR time-series measurements, S. Jafariserajehlou, L. Mei, M. Vountas, V.V. Rozanov, J. P. Burrows**
12. **Balloon-borne measurements of heating and cooling rates in Arctic stratocumulus, M. Gottschalk, F. Lauermann, J. Stapf, A. Ehrlich, H. Siebert, M. Wendisch**
13. **Cloud detection over snow and ice using synergy of MERIS/AATSR (OLCI/SLTSR), L. Istomina, H. Marks, G. Heygster**
14. **Satellite Remote Sensing of Halogens in the Arctic Troposphere, I. Bougoudis, A.-M. Blechschmidt, A. Richter, A. Schoenhardt, J. P. Burrows**

15. **Characterizing the vertical presence of atmospheric black carbon in the Arctic region during spring and summer**, M. Zanatta, H. Schulz, S. Wöhler, A. Herber
16. **IR-Spectroscopy using a FT-Interferometer in emission and absorption mode and preparation for the Polarstern cruises PS106 and PS107**, P. Richter, M. Palm, J. Notholt
17. **Closure of Arctic Cloud Properties and Radiative Fluxes from ground-based observations**, C. Barrientos V., H. Deneke, A. Macke
18. **N-ICE2015: Observational study on drifting Arctic sea ice north of Svalbard from winter to summer**, A. S. Gerland, B. M. A. Granskog, C. P. Assmy, D. P. Duarte, E. S. R. Hudson, F. N. Hughes, G. L. H. Smedsrud, H. G. Spreen, I. A. Sundfjord, J. H. Stehen
19. **Daily lead map of the European Arctic from Sentinel-1 SAR scenes**, D. Murashkin, G. Spreen, M. Huntemann
20. **Experiences with an optimal estimation algorithm for surface and atmospheric parameter retrieval from passive microwave data in the Arctic**, R. Scarlet, G. Heygster
21. **Automatic detection of polar mesocyclones using satellite microwave humidity sounders**, C. Melsheimer
22. **Merged Total Water Vapour product from AMSU-B and AMSR-E data in the Arctic region**, A. Triana Gómez, G. Heygster, C. Melsheimer
23. **Snow on Antarctic Sea Ice: Distribution and Trends**, T. Frost, S. Kern, G. Heygster
24. **Microwave Radar/radiometer for Arctic Clouds (MiRAC) for vertical profiling of ice and liquid water**, M. Mech, L. Dirks, T. Doktorowski, S. Crewell, T. Rose, M. Stoff
25. **Thin cloud characteristics over Ny-Ålesund, Spitsbergen and their radiative signatures from recent multi-year observations**, A. Kautzleben, M. Maturilli, R. Neuber, C. Ritter
26. **Characterization of Arctic Mixed Phase Clouds at regional and small scales**, O. Jourdan, G. Mioche, J. Delanoe, C. Goubeyre, R. Dupuy, A. Schwarzenboeck

Poster Session D – E:

27. **Influence of tropospheric circulation patterns on the winter middle and high-latitude mesosphere**, Ch. Jacobi, D. Mewes
28. **The Role of Intense Cyclones for Precipitation, Sea Ice and Snow Cover Distribution in the Nordic Seas**, E.M. Knudsen, S. Crewell, K.I. Hodges, A. Rinke
29. **A comparison of the two Arctic atmospheric winter states observed during N-ICE2015 and SHEBA**, R. M. Graham, A. Rinke, L. Cohen, S. R. Hudson, V. P. Walden, M. A. Granskog, W. Dorn, M. Kayser, M. Maturilli

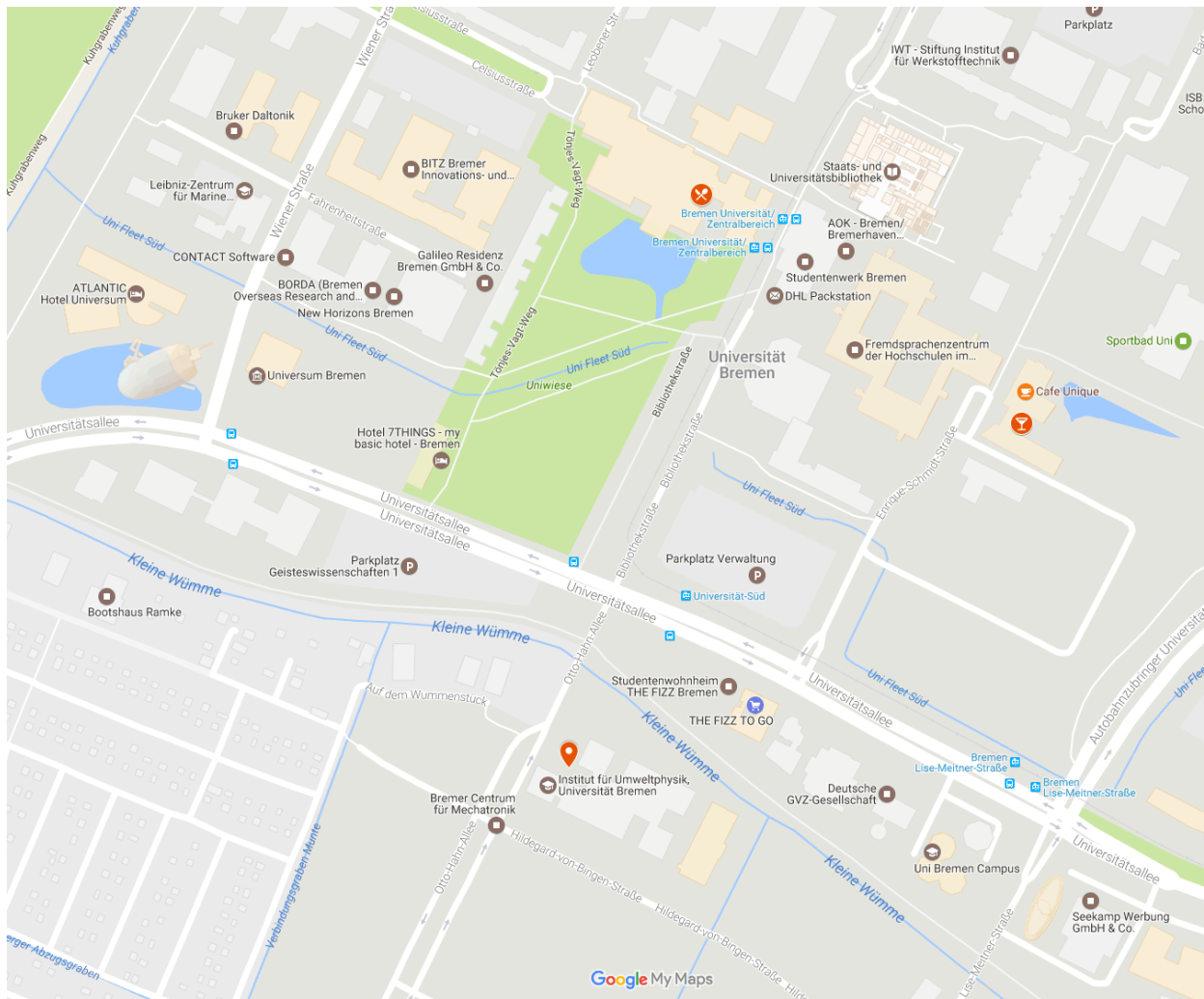
30. Sea ice concentrations at 1 km resolution from combined optical and passive microwave data, V. Ludwig, L. Istomina, G. Spreen
31. Meridional temperature flux in the vicinity of the Arctic, D. Mewes, Ch. Jacobi
32. Characterization of the cloud conditions at Ny-Ålesund using sensor synergy and representativeness of the observed clouds across Arctic sites, T. Nomokonova, K. Ebell, U. Löhnert, M. Maturilli
33. Evaluating Svalbard's exceptional geographical location from an Arctic surface temperature budget perspective, S. Dahlke, M. Maturilli
34. Thin sea ice thickness retrieval using L-band satellite sensors, C. Patilea, G. Heygster, M. Huntemann, G. Spreen
35. Multiyear sea ice concentration estimates using ASCAT and AMSR2 data, Y. Ye, G. Spreen, M. Shokr, G. Heygster
36. SWIFT: Fast stratospheric ozone chemistry for global climate models, D. Kreyling, I. Wohltmann, R. Lehmann, W. Dorn, M. Rex
37. Does Small Ice Exist in Arctic Mixed-phase Clouds?, E. Järvinen, *et al.*
38. Changes in Arctic sea ice dynamics observed by satellites, A. Kazlova, G. Spreen
39. Recent Progress Towards a Coupled Regional Climate Model System of the Arctic, W. Dorn, A. Rinke, C. Köberle, H. Matthes, K. Dethloff, R. Gerdes
40. Spatiotemporal patterns of snowfall in the Arctic, B. Segger, A. Rinke, S. Crewell, E. Knudsen, P. Rostosky, G. Spreen
41. Microphysical Properties and Radiative Impact of an intense biomass burning event in Ny-Ålesund, C. Ritter, C. Böckmann, R. Neuber, M. Maturilli
42. The effect of mid-latitude air masses on the high Arctic lower troposphere during spring (NETCARE 2015) and summer (NETCARE 2014), H. Bozem, P. Hoor, D. Kunkel, F. Köllner, J. Schneider, M. Willis, J. Burkart, W. R. Leaitch, A. Herber, J. Thomas, J. Abbatt
43. Evaluation of cloud properties in the Arctic in the global aerosol-climate model ECHAM6-HAM2 using the COSP satellite simulator, J. Kretzschmar, J. Quaas
44. Fine Scale Simulations of Arctic Cloud with an Improved Scheme for Mixed-phase Microphysics, J. Chylik, R. Neggers

- 45. Atmospheric Correction of Sea Ice Concentration Retrieval of 89 GHz AMSR-E Observations,** J. Lu, G. Heygster, G. Spreen, C. Melsheimer
- 46. Ridge detection from different spatial resolution SAR imagery,** T. Zhu, G. Spreen, W. Dierking, G. Heygster, F. Li, Y. Zhang, S. Zhang
- 47. Comparison of meteorological conditions in Svalbard fjords: Hornsund and Kongsfjorden,** M. Cisek, P. Makuch, T. Petelski
- 48. Influences of surface heterogeneities on Arctic low-level cloud entrainment by shear – A motivation and a first test,** R. Rauterkus
- 49. A coupled large-eddy simulation sea ice model for simulating Arctic air mass transformation,** A. Dimitrellos, A. M. L. Ekman, R. Caballero
- 50. Plans for a HALO campaign within (AC)³,** M. Wendisch, M. Brückner, S. Crewell, J. Notholt, J. P. Burrows, K. Dethloff, K. Ebell, A. Ehrlich, C. Lüpkes, A. Macke, J. Quaas, A. Rinke, I. Tegen, R. Neggers, A. Herber, M. Rex
- 51. Planned contributions of (AC)³ to MOSAiC,** M. Wendisch, M. Brückner, S. Crewell, J. Notholt, J. P. Burrows, K. Dethloff, K. Ebell, A. Ehrlich, C. Lüpkes, A. Macke, J. Quaas, A. Rinke, I. Tegen, R. Neggers, A. Herber, M. Rex

How to get to the conference locations?

The 1st (AC)³ Science Conference will take place at the **University of Bremen, Institute for Environmental Physics (IUP)** (<http://www.iup.uni-bremen.de/eng/>). Detailed travel information can be found [here](#).

Address: Institute of Environmental Physics
University of Bremen
Otto-Hahn-Allee 1
D-28359 Bremen, Germany



Arrival:

- If you come **by train**, the trip lasts:
 - About 35 min from Bremerhaven (each hour)
 - About 3h from Köln (each hour)
 - About 3h50 from Potsdam (2 connections in Berlin, Hamburg)
 - About 4h10 min from Leipzig (each 2 hours)
- If you come **by car**, there are enough parking facilities in front of the IUP building
- If you come **by plane**, the easiest way is to land at Bremen Airport and take the tram No. 6 to "Universität" You need to get off at the stop "Universität-Süd". Our building then is just across the street. It is marked "NW1" with big letters on top. In front of the terminal building, also taxis are waiting.

Ice breaker on Sunday, 26 March 2017

Location: Café Unique
Enrique-Schmidt-Straße 7
28329 Bremen

cafe-unique.de

Evening reception on Monday, 27 March 2017

Location: Haus der Wissenschaft
Sandstraße 4/5
28195 Bremen

www.hausderwissenschaft.de

