2nd (AC)³ Science Conference on Arctic Amplification

November 12th – 14th, 2018

Klimahaus 8°Ost Bremerhaven,
Am Längengrad 8, 27568 Bremerhaven

Agenda

MONDAY, 12 November (Villa Seebeck)
18:00 – 22:00 Ice Breaker (drinks and finger food)

TUESDAY, 13 November (Klimahaus Bremerhaven, Kyoto)
08:00 – 18:00 Registration desk

09:00 – 09:20 Opening of the Conference (M. Wendisch)

09:20 – 09:40 André Ehrlich, Andreas Macke et al. (University of Leipzig, TROPOS)
“Overview of ALOUD/PASCAL”

09:40 – 10:00 Andreas Herber et al. (AWI)
“Overview of PAMARCMiP”

10:00 – 11:15 Session A (Chairs: C. Barrientos, A. Ehrlich):
Fluxes in the Arctic Boundary Layer

10:00 – 10:30 Keynote talk by Michael Tjernström (Stockholm University)
“Boundary-Layer Fluxes: How do they relate to the bigger picture?”

10:30 – 10:45 Ulrike Egerer et al. (TROPOS)
“Humidity Layers above Arctic Clouds during PASCAL – Boundary Layer Effect or Advection?”
10:45 – 11:00 Johannes Stapf et al. (University of Leipzig)
“Sea Ice Influence on the Radiative Energy Budget in the Cloudy Arctic”

11:00 – 11:15 Dmitry Chechin et al. (AWI-Bremerhaven)
“Turbulent Structure of the Cloud-Topped Atmospheric Boundary Layer in Arctic Summer: Aoud Airborne Observations”

11:15 – 11:45 Coffee break

11:45 – 13:15 Session B (Chairs: S. Jafariserajehlou, M. Buschmann):
Clouds, Aerosols & Water Vapour

11:45 – 12:15 Keynote talk by Matt Shupe (NOAA)
“Observed Cloud-Radiation Processes and their Impact on the Arctic Surface”

12:15 – 12:30 Elena Ruiz Donoso et al. (University of Leipzig)
“Small-Scale Variability of Cloud Thermodynamic Phase in Arctic Mixed-Phase Clouds”

12:30 – 12:45 Linlu Mei et al. (University of Bremen)
“Remote Sensing of Aerosol/Cloud Using Satellite Observations: Recent Progress in (AC)³”

12:45 – 13:00 Markus Hartmann et al. (TROPOS)
“The Arctic Aerosol: INP, CCN and its Mixing State”

13:00 – 13:15 Arantxa María Triana Goméz et al. (University of Bremen)
“Accuracy Assessment for AMSU-B/MHS TWV Algorithm”

13:15 – 14:15 Lunch break

14:15 – 15:30 Session C (Chairs: E. Jäkel, I. Bougoudis):
Surface Atmosphere Interactions: Processing & Trace Constituents

14:15 – 14:45 Keynote talk by Alexander Kokhanovsky (VITROCISET)
“The OLCI Snow Products: Algorithms and Examples from Sentinel 3A”

14:45 – 15:00 Anne Blechschmidt et al. (University of Bremen)
“Satellite Observations of Halogen Oxides over the Arctic in a Changing Climate”

15:00 – 15:15 Marco Zanatta et al. (AWI-Bremerhaven)
“Migration of Black Carbon in the Snow Pack: Natural Process or Instrumental Artefact?”
Christine Pohl et al. (University of Bremen)
“Broadband Albedo of Arctic Sea Ice from MERIS Data”

Coffee break

Poster session A – C (see table below)

Poster Session Keynote by Eleonora Zege (NAS of Belarus)
“Satellite Remote Sensing of Ice Cover in the Arctic: Approaches, Software, Validation”

Poster presentations

Social Event (Deutsches Auswandererhaus – German Emigration Center)

60-minutes guided tour through the permanent exhibition of the German Emigration Center

Dinner (Restaurant “Speisesaal”)
WEDNESDAY, 14 November (Klimahaus Bremerhaven, Kyoto)

08:30 – 17:00 Registration desk

09:00 – 10:30 Session D (Chairs: J. Kretzschmar, B. Heinold): Atmospheric Circulation & Transport

09:00 – 09:30 Keynote talk by Timo Vihma (FMI) “The Role of Atmospheric Circulation on Extreme Weather Events in the Arctic”

09:30 – 09:45 Daniel Mewes et al. (University of Leipzig) “Heat Transport Pathways into the Arctic and their Connections to Surface Air Temperatures”

09:45 – 10:00 Philip Rostosky et al. (University of Bremen) “Modeling the Microwave Emissions of Snow on Arctic Sea Ice for Improving Snow Depth Retrievals from Satellites”

10:00 – 10:15 Wolfgang Dorn et al. (AWI Potsdam) “An Upgraded Version of the Coupled Regional Climate Model HIRHAM-NAOSIM for Studying Interactions between Atmosphere and Sea Ice in the Arctic”

10:15 – 10:30 Jacob Schacht et al. (TROPOS) “Sources and Transport Pathways of Aerosol to the Arctic – An Aerosol-Climate Model Evaluation Study”

10:30 – 11:00 Coffee break

11:00 – 12:30 Session E (Chairs: R. Gierens, A. von Lerber): Integration & Synthesis

11:00 – 11:30 Keynote talk by Damao Zhang (Brookhaven National Laboratory) “Multi-Sensor, Multi-Platform Observations of Mixed-Phase Clouds”

11:30 – 11:45 Tatiana Nomokonova et al. (University of Cologne) “Cloud Statistics at Ny-Ålesund Using Ground-Based Sensor Synergy”

11:45 – 12:00 Benjamin Segger et al. (AWI-Potsdam) “Evaluation of Arctic Precipitation in six Atmospheric Reanalyses: Similarities and Differences”

12:00 – 12:15 Jan Chylík et al. (University of Cologne) “The Impact of Cloud Microphysical Properties on the Development of Arctic Mixed-Phase Clouds”
12:15 – 12:35  Manfred Wendisch (University of Leipzig)  
“What did we learn so far and where do we go from here?”

12:35 – 13:45  Lunch break

13:45 – 15:30  Poster session D – E (see table below)

15:30 – 16:00  Coffee break

16:00 – 18:00  General Assembly of (AC)³

16:00 – 16:30  Report of Speaker and Scientific Coordinator

16:30 – 17:00  Awarding the “(AC)³ Distinguished Young Investigators Prize”

17:00 – 18:00  Concluding Discussion

18:00  End of Conference

(AC)³ is going to cover all coffee and lunch breaks during the conference and non-alcoholic drinks and food during the “Social Event” via the central project Z. TROPOS will fund non-alcoholic drinks and finger food during the Ice Breaker and AWI will sponsor the costs for the “Social Event” event besides the Conference Dinner.
Poster Session A – C:

#A01 Cloud radiative forcing at the surface during PS106, C. Barrientos, H. Deneke, A. Macke, H. Griesche, R. Engelmann, and P. Seifert

#A02 Effect of leads and wind speed on clear-sky cooling over Arctic sea ice during polar night, D.G. Chechin, I.A. Makhotina, C. Lüpkes, and A.P. Makshtas

#A03 Measured radiative heating rates in single and multi-layer Arctic clouds, M. Gottschalk, U. Egerer, H. Siebert, A. Ehrlich, and M. Wendisch

#A04 In-cloud turbulence observations from a cloud radar during PASCAL, H.J. Griesche, P. Seifert, R.A.J. Neggers, J. Chylík, R. Engelmann, and M. Radenz

#A05 Transfer coefficients based on new modified and extended stability functions for the stably stratified surface layer using SHEBA measurements, V.M. Gryyanik, A. Grachev, C. Lüpkes, D. Sidorenko


#B02 Cloud Microphysical Properties of Summertime Arctic Stratocumulus during the ACloud Campaign: Comparison with Previous Results in the European Arctic, R. Dupuy, O. Jourdan, G. Mioche, M. Schnaiter, S. Mertes, and A. Schwarzenboeck

#B03 Chemical identification of different aerosol species in summertime Arctic clouds and ambient air, O. Eppers, F. Köllner, H.-C. Clemen, H. Bozem, S. Mertes, E. Järvinen, J. Schneider, P. Hoor, and S. Borrmann

#B04 Comparison of snow reflectance measured during ARCTAS campaign with model results using SCIATRAN RTM, S. Jafari-Serajehlou, V. Rozanov, C. Pohl, L. Mei, M. Vountas, and J. P. Burrows
Understanding rapid changes in phase partitioning between cloud liquid and ice in an Arctic stratiform mixed-phase cloud, H. Kalesse, G. de Boer, A. Solomon, M. Oue, M. Ahlgrimm, D. Zhang, M. Shupe, E. Luke, and A. Protat


Analyzing aircraft radar observations of Arctic clouds in case of artifacts and clutter, L.-L. Kliesch, A. Anhäuser, S. Crewell, M. Mech, and P. Kollias

Latest progresses of the retrieval of aerosol optical thickness over snow surfaces, L. Mei, V. Rozanov, S. Jafariserajehlou, M. Vountas, J.P. Burrows


Influence of cloud base height and surface-coupling state on heterogeneous ice formation observed during Polarstern cruise PS106, K. Ohneiser, P. Seifert, H. Griesche, R. Engelmann, J. Bühl, and A. Ansmann

Separating particle populations in cloud radar Doppler spectra of mixed phase clouds, M. Radenz, J. Bühl, H. Griesche, P. Seifert, and R. Engelmann

Investigation of polar low formation and development over the Nordic Sea: Synergetic approach using the Arctic System Reanalysis, Microwave satellites and Radiative Transfer Simulations, A. Radovan, S. Crewell, A. Rinke, M. Mech, and E.M. Knudsen

Retrieval of cloud parameters from IR spectra recorded by a FTIR spectrometer during the Polarstern cruises PS106 and PS107, P. Richter, M. Palm, C. Weinzierl, and J. Notholt

Simulated and observed horizontal inhomogeneities of optical thickness of Arctic stratus, M. Schäfer, K. Loewe, A. Ehrlich, C. Hoose, and M. Wendisch
The role of marine carbohydrates on the freezing activity in Arctic seawater samples, S. Zeppenfeld, M. Hartmann, M. van Pinxteren, A. Bracher, F. Stratmann, and H. Herrmann

Investigating long-term Evolution of Arctic BrO and Links to Driving Mechanisms and Sources under the Impact of Arctic Amplification, I. Bougoudis, A.-M. Blechschmidt, A. Richter, S. Seo, and J.P. Burrows


Solar radiative effects of black carbon suspended in surface snow and in the atmosphere, T. Donth, A. Ehrlich, E. Jäkel, M. Wendisch, and M. Zanatta

Climatological Impact on Arctic of Black Carbon Transport from European Major Population Centers, A.B. Kalisz Hedegaard, A. Hilboll, H. Schlager, M. Vrekoussis

Validation of the sea ice albedo scheme of HIRHAM-NAOSIM using aircraft and ground-based observation during the ACloud/Pascal campaign, E. Jäkel, J. Stapt, M. Wendisch, M. Nicolaus, W. Dorn, and A. Rinke

ALICE – a remotely piloted air sampling system for methane isotopic analysis, F. Pätzold, T. Krüger, E. Damm, and A. Lampert

Assessing bio-physical feedbacks in the shelf areas of Laptev Sea, V. Pefanis, M.A. Soppa, S. Loza, S. Hellmann, J. Hölemann, M.A. Janout, F. Martynov, B. Heim, V. Rozanov, T. Dinter1, and A. Bracher

First BrO retrievals and small-scale enhancement analysis in the Arctic using TROPOMI/S5P, S. Seo, A. Richter, A.-M. Blechschmidt, I. Bougoudis, and J. P. Burrows
**Poster Session D – E, INF:**

*D01* Characterisation of the Air Mass History during A CLOUD 2017 and PAMARCMIP 2018, **H. Bozem**, D. Kunkel, O. Eppers, F. Köllner, H.-C. Clemen, J. Schneider, and P. Hoor

*D02* Arctic cloud cover bias in ECHAM and its sensitivity to surface fluxes and cloud microphysics, **J. Kretzschmar**, M. Salzmann, J. Mülmenstädt, and J. Quaas

*D03* SWIFT: Fast stratospheric ozone chemistry for global climate models, **D. Kreyling**, I. Wohltmann, R. Lehmann, W. Dorn, and M. Rex

*D04* Stability of the cold halocline in the Arctic ocean, **E. Metzner**, M. Salzmann, and R. Gerdes

*D05* Evaluation of thermodynamic and dynamic contributions to 2007 summer Arctic sea ice retreat in a coupled regional climate model, **X. Yu**, A. Rinke, W. Dorn, G. Spreen, H. Sumata, and C. Lüpkes

*E01* Atmospheric trace gas measurements from Ny-Ålesund and PS106/107, **M. Buschmann**, M. Palm, and J. Notholt

*E02* The observed recent surface air temperature development across Svalbard and concurring footprints in local sea ice cover, **S. Dahlke**, M. Maturilli, P. Wagner, N. Hughes, T. Wawrzyniak, and B. Ivanov

*E03* Characterization of the cloud radiative effect and forcing at Ny-Ålesund based on ground-based remote sensing observations, **K. Ebell**, T. Nomokonova, M. Maturilli, and C. Ritter


*E05* The lapse rate in the Arctic – local and global influences, **M. Lauer**, K. Block, M. Salzmann, and J. Quaas

*E06* Validation of space-based snowfall estimate by using a combination of weather radar and surface measurements in southern Finland, **A. von Lerber**, D. Moisseev, D.A. Marks, W. Petersen, and A.-M. Harri
Impact of winter cyclones on the terrestrial environment in Svalbard, M. Maturilli, J. Boike, S. Dahlke, and B. Segger

Large-Eddy Simulation of a Stratocumulus-Topped Arctic Boundary Layer over Sea Ice, R. Rauterkus, C. Ansorge, Y. Shao, and U. Löhner

Water vapour and hygroscopic properties of aerosol derived by lidar in the Polar Night, C. Ritter, K.J. Müller, B. Kulla, K. Nakoudi, and R. Neuber

Setting up and putting into context – high-resolution simulations around point measurements at Ny-Ålesund, V. Schemann, and K Ebell

Arctic multilayer clouds: A classification using radiosonde and radar data, M. Vassel, L. Ickes, M. Maturilli, and C. Hoose

Moisture transport and precipitation patterns associated with the atmospheric rivers reaching Svalbard: the ACLOUD campaign, C. Viceto, M. Mech, S. Crewell, A. Rinke, A. Rocha, and I. Gorodetskaya

Scientific Data Management (INF) in (AC)³, M. Buschmann and J. Notholt