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 ACLOUD/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: ACLOUD 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 Producs: 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?"

15:15 – 15:30	**Christine Pohl et al.** *(University of Bremen)* "Broadband Albedo of Arctic Sea Ice from MERIS Data"
15:30 – 16:00	*Coffee break*
16:00 – 18:00	**Poster session A – C** (see table below)
16:00 – 16:30	Poster Session Keynote by **Eleonora Zege** *(NAS of Belarus)* "Satellite Remote Sensing of Ice Cover in the Arctic: Approaches, Software, Validation"
16:30 – 18:00	Poster presentations
19:00 – 23:00	**Social Event (Deutsches Auswandererhaus – German Emigration Center)**
19:00 – 20:00	60-minutes guided tour through the permanent exhibition of the German Emigration Center
20:00 – 23:00	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 Artic 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" (3 Best Posters)
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.Chylik, 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. Gryanik, A. Grachev, C. Lüpkes, D. Sidorenko*

#A06 **Local and remote controls on Arctic Mixed Layer evolution,** *R.A.J. Neggers, J. Chylík, V. Schemann, U. Egerer, H. Griesche, P. Seifert, H. Siebert, A. Macke*

#B01 **Study of the vertical and horizontal distribution of aerosol particles using unmanned research aircraft in Ny-Ålesund,** *B. Altstädter, A. Lampert, K. Bärfuss, L. Bretschneider, F. Pätzold, R. Käthner, M. Hermann, M. Schön, C. Crazzolara, A. Platis, J. Bange, and B. Wehner*

#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. Jafariserajehlou, V. Rozanov, C. Pohl,L. Mei, M. Vountas, and J. P. Burrows*

#B05 **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*

#B06 **Changes of Top-Of-Atmosphere Reflectance in the Arctic from 1996 to the Present and its relationship to Arctic amplification,** *N. Khosravi, M. Vountas, L. Lelli, T. Stamoulis, and J. P. Burrows*

#B07 **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*

#B08 **Latest progresses of the retrieval of aerosol optical thickness over snow surfaces,** *L. Mei, V. Rozanov, S. Jafariserajehlou, M. Vountas, J.P. Burrows*

#B09 **Aerosol properties of arctic cloud residual and ambient aerosol particles measured during ACLOUD,** *S. Mertes, U. Kästner, O. Eppers, M. Zanatta, E. Järvinen, R. Dupuy, H. Bozem, and J. Schneider*

#B10 **Elevated aerosol layers in the European Arctic during PAMARCMIP2018,** *K.Nakoudi, C.Ritter, and R.Neuber*

#B11 **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*

#B12 **Separating particle populations in cloud radar Doppler spectra of mixed phase clouds,** *M. Radenz, J. Bühl, H. Griesche, P. Seifert, and R. Engelmann*

#B13 **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*

#B14 **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*

#B15 **Simulated and observed horizontal inhomogeneities of optical thickness of Arctic stratus,** M. Schäfer, K. Loewe, A. Ehrlich, C. Hoose, and M. Wendisch

#B16 **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*

#C01 **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*

#C02 **Long-term Time-series of Arctic BrO derived from Satellite Remote Sensing,** *I. Bougoudis, A.-M. Blechschmidt, A. Richter, S. Seo, and J.P. Burrows*

#C03 **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*

#C04 **Climatological Impact on Arctic of Black Carbon Transport from European Major Population Centers,** *A.B. Kalisz Hedegaard, A. Hilboll, H. Schlager, M. Vrekoussis*

#C05 **Validation of the sea ice albedo scheme of HIRHAM-NAOSIM using aircraft and ground-based observation during the ACLOUD/PASCAL campaign,** *E. Jäkel, J. Stapf, M. Wendisch, M. Nicolaus, W. Dorn, and A. Rinke*

#C06 **ALICE – a remotely piloted air sampling system for methane isotopic analysis,** *F. Pätzold, T. Krüger, E. Damm, and A. Lampert*

#C07 **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*

#C08 **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 ACLOUD 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*

#E04 **Interactions between Arctic boundary layer and low level mixed-phase clouds,** *R. Gierens, K. Ebell, S. Kneifel, N. Küchler, T. Marke, T. Nomokonova, C. Ritter, M. Maturilli, and U. Löhnert*

#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*

#E07 **Impact of winter cyclones on the terrestrial environment in Svalbard,** *M. Maturilli, J. Boike, S. Dahlke, and B. Segger*

#E08 **Large-Eddy Simulation of a Stratocumulus-Topped Arctic Boundary Layer over Sea Ice,** *R. Rauterkus, C. Ansorge, Y. Shao, and U. Löhnert*

#E09 **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*

#E10 **Setting up and putting into context – high-resolution simulations around point measurements at Ny-Ålesund,** *V. Schemann, and K Ebell*

#E11 **Arctic multilayer clouds: A classification using radiosonde and radar data,** *M. Vassel, L. Ickes, M. Maturilli, and C. Hoose*

#E12 **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*

#INF01 **Scientific Data Management (INF) in (AC)³,** *M. Buschmann and J. Notholt*