

# Workshop on Airborne Activities in the Arctic: Science and Prospects

3 - 5 June 2019 | Bremen | Germany

After the first „Workshop on Airborne Activities in the Arctic: Science and Prospects“ performed in Leipzig, 5-6 October 2017, we would like to invite you to a follow-up meeting in Bremen (3-5 June 2019). There are two objectives of this meeting: to generally review the research needs in the Arctic and the plans to address them with airborne campaigns for the years to come (including collaborations), and to more specifically plan airborne efforts related to MOSAiC and (AC)<sup>3</sup>. The following preliminary **Agenda** is planned for the workshop.

## Monday, 3 June

12:00 - 12:30 **Registration** (in front of meeting room)

12:30 - 12:40 **Opening of the workshop** (*Manfred Wendisch, Andreas Herber*)

12:40 - 15:20 **Research needs and future airborne campaigns in the Arctic (Part I)**

(presentations 15' + 5' discussion), session chair: *Manfred Wendisch*

- *Matt Shupe*: "Arctic climate processes in their annual cycle: Planned observations during **MOSAIC**"
- *Andreas Herber, Manfred Wendisch*: "AWI and (AC)<sup>3</sup> aircraft campaigns during **MOSAIC**"
- *Daniel Steinhage*: "Overview on the AWI Airborne campaigns in the next few years in the Arctic"
- *Timo Vihma*: "Warm air intrusions: Open questions and how airborne measurements could contribute"
- *Manfred Wendisch*: "Introduction of the **HALO-(AC)<sup>3</sup>** campaign"
- *Paul Field*: "Quasi-Lagrangian sampling of cold air outbreaks"
- *Bart Geerts*: "Airborne remote sensing and in situ observations of the dynamics and microphysics of clouds in the marine ABL during cold air outbreaks: the **CAESAR** campaign"
- *Harald Sodemann*: "The water cycle of cold-air outbreaks and moist intrusions: A stable isotope perspective"

15:20 - 15:50 **Coffee break**

15:50 - 18:10 **Research needs and future airborne campaigns in the Arctic (Part II)**

(presentations 15' + 5' discussion), session chair: *Andreas Herber*

- *Christiane Voigt, Yvonne Booset*: "**CIRRUS-HL** – the airborne experiment on ice clouds in high latitudes with HALO"
- *Martin Wirth, Andreas Fix*: "Introduction of the **CoMet 2.0 Arctic** HALO campaign"
- *Steven Cavallo, Dave Parsons*: "**THINICE**: Project motivation and goals"
- *Sebastian Schmidt, Patric Taylor*: "The **ARCSIX** project: Motivation and objectives"
- *Kathy Law, Steve Arnold*: "Plans for airborne campaigns in the Arctic within **PACES**"
- *Sebastian Gerland*: "Helicopter measurements and aircraft overflight to better connect with the **Nansen Legacy** area"
- *René Forsberg*: "Satellite validation flights in the Arctic Ocean – ESA **CryoVEx** and other missions"

18:15 **Joint Dinner at Maritim Hotel (hosted by AWI)**

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## Tuesday, 4 June

### 08:30 - 10:30 MOSAIC accompanying airborne measurements – Science overview

(presentations 7' + 3' discussion), session chair: *Markus Rex*

- *Christof Lüpkes*: "Arctic Boundary Layer Studies"
- *Rupert Holzinger*: "Motivation, Objectives, Flight Pattern Request, Request from the Atmospheric Observatory and Expected Results"
- *Marco Zanatta*: "Aerosol and Black Carbon"
- *Olivier Jourdan*: "Remote sensing and in situ measurements of cloud properties and radiation"
- *Susanne Crewell*: "Mixed-phase clouds and their environment"
- *Stefan Hendricks*: "Sea Ice and Snow Thickness"
- *Ina Tegen*: "Polar Transport and Dynamics"
- *Matt Shupe*: "Needs of Polarstern groups with respect to airborne observations and necessary coordination requirements"
- *Stefan Hendricks*: "Sea ice observatory"
- *Suman Singha*: "Coordinating airborne and satellite-borne sea ice measurements during MOSAIC"
- *Gijs de Boer*: "UAS-based science as part of MOSAIC"
- *Gerit Birnbaum*: "Year-round helicopter measurements of sea ice characteristics during MOSAIC"

### 10:30 - 11:00 Coffee break

### 11:00 - 12:30 MOSAIC accompanying airborne measurements – Logistic overview

(presentations 7' + 3' discussion), session chair: *Daniel Steinhage*

- *Dirk Mengedot*: "Time table and logistic MOSAIC"
- *Thomas Krumpen*: "Flight distances based on drift analysis"
- *Andreas Herber, Benjamin Harting*: "Logistics preparation"
- *Martin Gehrmann*: "Integration procedure and certification"
- *Jim Haffey, Will Wilson*: "Special aspects of air operation"
- *Antonia Immerz*: "MOSAIC: Data policy and data management"
- *Christian Paulmann*: "Met forecast for airborne operation"
- *Lukas Piotrowski*: "Helicopter operation and Polarstern airfield"
- *Bjela König*: "Safety concept"
- *Henrik Skov*: "Science and logistic VRS / STN"

### 12:30 - 13:30 Lunch

### 13:30 - 14:30 MOSAIC accompanying airborne measurements – Coordination and discussion

(presentations 15' + 5' discussion), session chair: *Dirk Mengedot*

- Flight pattern and logistics in Longyearbyen and Station Nord, Villum Research Station
- Expectation from both sides (Polarstern observatory and airborne community)
- Coordination with other activity, data access & exchange, ice runway, communication & media, coordination air activity, etc.

### 14:30 - 15:00 Coffee break

### 15:00 - 16:40 HALO-(AC)<sup>3</sup>: Lagrangian observations of Arctic air mass transformations

(presentations 15' + 5' discussion), session chair: *André Ehrlich*

- *Felix Pithan*: "How to optimally design airborne observations of warm air intrusions: A modeller's perspective"
- *André Ehrlich*: "Airborne observations of warm air intrusions during HALO-(AC)<sup>3</sup>"
- *Vera Schemann*: "Large-Eddy-Simulations during HALO-(AC)<sup>3</sup>: Process evaluation and flight planning"
- *Silke Gross*: "Remote sensing of warm air intrusions with HALO"
- *Manfred Wendisch*: "Discussion on further steps"

### 16:40 - 17:00 Final remarks/close of the meeting

### 17:30 Joint Dinner at Ständige Vertretung Bremen (Böttcherstraße 3-6, 2815 Bremen)

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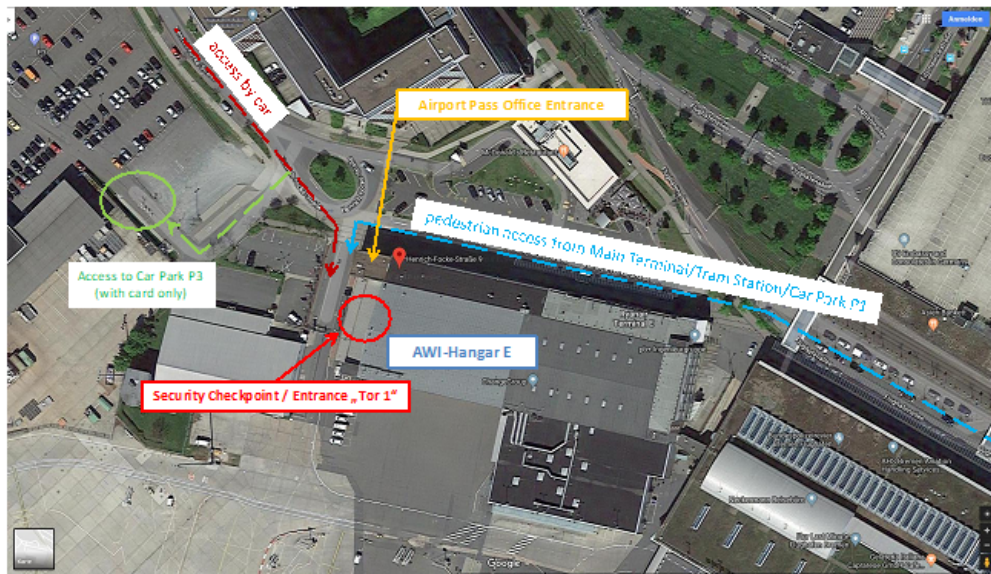
## Wednesday, 5 June

08:30 - 10:30

**Visit the Polar research aircraft of AWI at Bremen airport**

[Meeting Point: Flughafen Bremen, AWI-Hangar E – In front of Gate, Henrich-Focke-Str. 9, 28199 Bremen, see map at the end....]

### AWI Hangar E location



<https://goo.gl/maps/ar27k8d5ja92>

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## MEETING LOGISTICS

### REMOTE PARTICIPATION:

The remote participation will be possible on the 1st day – information shortly before the workshop.

**VENUE:** Maritim Hotel Bremen, Hollerallee 99, 28215 Bremen

<https://www.maritim.de/de/hotels/deutschland/hotel-bremen/anfahrt>

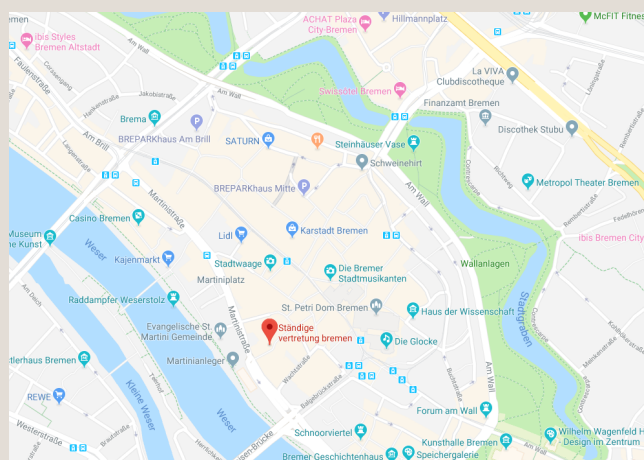
### FURTHER INFORMATION & UPDATES:

<http://www.ac3-tr.de/meeting/workshop-on-airborne-activities-in-the-arctic-science-and-prospects/>



### JOINT DINNER (TUESDAY):

<https://www.staev.de/bremenhttps://www.staev.de/bremen.html.html>



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## TRANSPORTATION:

The Maritim Hotel & Congress Centre Bremen is located centrally and is in a tranquil area between the main railway station and the „Bürger“ park. The Congress Centre is linked directly with the main building. The ÖVB Arena as well as the trade fair are also easily accessible, without the need to get wet. The bus routes 26 and 27 pass right in front of the hotel. The famous „Bremer Stadtmusikanten“, the historic Town Hall, the „Schnoorviertel“ with its famous „Böttcherstraße“, the Weser promenade and much more are within easy walking distance. Distances are: Main railway station: 0.5 km; Motorway A27: 4 km; Airport Bremen: 7 km

## ACCOMODATION:

- Maritim - Hotel & Congress Centrum Bremen (Hollerallee 99, 28215 Bremen),  
<http://www.maritim.com/>  
We have reserved a contingent of rooms (single room for 99 € - AWI rate)
- InterCity Hotel Bremen (Bahnhofplatz 17-18, 28195 Bremen),  
<https://intercityhotel-bremen.h-rzn.com>
- B&B Hotel Bremen Hbf. (Findorffstraße 28 -32, 28215 Bremen).  
<https://www.hotelbb.de/de/bremen-hbf>