

Seminar über Microwave Physics and Atmospheric Physics

Referent/in: Kerstin Ebell, Universität zu Köln

Titel: Clouds at the Arctic site Ny-Ålesund, Svalbard: long-term statistics and detailed process studies

Arctic clouds are still challenging for both observations and modeling. High-quality observations are needed to understand better the processes related to Arctic clouds and their role in affecting the Arctic climate. Only a few sites exist in the Arctic where continuous cloud observations with a high vertical resolution are performed. One of these sites is the French-German Arctic Research Base AWIPEV at Ny-Ålesund / Svalbard, where a 94 GHz cloud radar has been installed as part of the Transregional Collaborative Research Centre TR172 on Arctic Amplification (AC)³ (www.ac3-tr.de) in 2016 and has been complemented by a polarimetric scanning 35 GHz cloud radar in 2021. This presentation will highlight ongoing and upcoming (AC)³ cloud research activities at Ny-Ålesund.

Based on the multi-year 94 GHz cloud radar observations, we find an average cloud occurrence of 78% at Ny-Ålesund. While pure liquid water clouds show a distinct seasonal cycle, mixed-phase clouds, which contain both liquid and ice, occur all year long (on average 42% of the time). Liquid-containing clouds are particularly interesting since they strongly impact and often dominate the cloud radiative effect. We will thus focus on low-level mixed-phase clouds (MPCs) at Ny-Ålesund in more detail: we will provide insights into the long-term characteristics of low-level MPCs and relate these to the surface coupling and wind regime. By incorporating the measurements from a micro rain radar and the 35 GHz cloud radar, we also have a closer look into precipitation formation processes within these clouds.

Zeit: Friday, 11.10.2024, 10:15 Uhr

Ort: Room A97
<https://unibe-ch.zoom.us/j/97081325603?pwd=d0ozME5xOS9pQVNxallLem81VHQyZz09>
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