

Anmeldung eines Themas für eine Bachelorarbeit

Thema Datum	Identifying the Arctic marginal sea ice concentration below clouds by using airborne remote sensing measurements 14.12.2020
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Kurzbeschreibung:	Three airborne based measurement campaigns (ACLOUD, AFLUX and MOSAiC-ACA) were performed in summer and winter conditions in the Arctic region to study Arctic boundary layer clouds. During these campaigns, two spectral imagers, Eagle and Hawk, were used on the Polar 5 research aircraft to perform radiance measurements. The main differences between these two instruments are their spectral range and their field of view. While the Eagle covers the visible range (400 nm to 1000 nm), the Hawk instrument covers the near infrared (NIR, 1000 nm to ~2500 nm). The goal of this thesis is to combine the spectra of both instruments from the nadir-pixels along the flightpath to identify the ice coverage at the surface below clouds and analyze the spectral differences between the visible and the NIR.
Literatur:	Ruiz-Donoso et al. 2020: <i>Small-scale structure of thermodynamic phase in Arctic mixed-phase clouds observed by airborne remote sensing during a cold air outbreak and a warm air advection event</i> , Atmos. Chem. Phys., 20, 5487–5511, 2020, https://doi.org/10.5194/acp-20-5487-2020 Ehrlich et al. 2019: <i>A comprehensive in situ and remote sensing data set from the Arctic CLOUD Observations Using airborne measurements during polar Day (ACLOUD) campaign</i> , Earth Syst. Sci. Data, 11, 1853–1881, 2019, https://doi.org/10.5194/essd-11-1853-2019