Anmeldung eines Themas für eine Bachelorarbeit

Thema Datum	How well do in-situ measured and remotely sensed microphysical properties of mixed-phase clouds agree?
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Kurzbeschreibung:	In-situ observations provide detailed insights into the microphysical properties of clouds. However, such measurements are scarce, and consequently huge efforts are put in the development of remote-sensing based retrievals for which much more extensive datasets exist. Goal of this thesis is to conduct tailored case studies of closures between in-situ-observed and remotely-sensed microphysical properties of mixed-phase clouds. We will use data from the RACLETS experiment, which took place in Davos, CH, in 2019. During RACLETS, in-situ measurements were conducted with a holographic imaging probe. In parallel, remote-sensing data was acquired with a combination of lidar, cloud radar, and microwave radiometer. Specifically, the parameters ice water content and ice crystal number concentration will be evaluated. The sensitivity of the remote-sensing retrievals against assumptions of ice crystals shapes, fall velocities and shape of the number size distribution will be characterized.
Literatur:	Bühl et al., 2019: https://doi.org/10.5194/amt-12-6601-2019 Ramelli et al., 2021: https://acp.copernicus.org/articles/21/6681/2021/ Sourdeval et al., 2018: https://doi.org/10.5194/acp-18-14327-2018