

Anmeldung eines Themas für eine Bachelorarbeit

Thema Datum	The cloud fraction variability in the Fram Strait area based on active and passive remote sensing observations 07.01.2024
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Kurzbeschreibung:	Clouds play a crucial role in Arctic amplification because their presence can either amplify or mitigate the warming effect in the Arctic. A simple parameter to describe the cloudiness is cloud fraction, which provides information about the amount of cloud cover in a particular area. Cloud fraction can be estimated by active and passive remote sensing instruments based on e.g. research aircraft and/or satellites. The goal of this bachelor thesis is to identify the variability of the cloud fraction in the Fram Strait area based on satellite measurements and compare these observations with airborne measurements conducted during the HALO-(AC) ³ campaign in spring 2022 in a statistical manner. The outcome of this project will enhance our understanding of cloud dynamics in this region and their significance within the Arctic climate system.
Literatur:	HALO-(AC) ³ campaign Website: https://halo-ac3.de (last access 02.01.2024) Wendisch, M., Brückner, M., Burrows, J. P., Crewell, S., Dethloff, K., Ebell, K., Lüpkes, C., Macke, A., Notholt, J., Quaas, J., Rinke, A., and Tegen, I.: Understanding Causes and Effects of Rapid Warming in the Arctic, EOS, 98, https://doi.org/10.1029/2017EO064803 , 2017. Wendisch, M., and Coauthors, 2023: Atmospheric and Surface Processes, and Feedback Mechanisms Determining Arctic Amplification: A Review of First Results and Prospects of the (AC) ³ Project. Bull. Amer. Meteor. Soc., 104, E208–E242, https://doi.org/10.1175/BAMS-D-21-0218.1 . Konow, H., Ewald, F., George, G., Jacob, M., Klingebiel, M., Kölling, T., Luebke, A. E., Mieslinger, T., Pörtge, V., Radtke, J., Schäfer, M., Schulz, H., Vogel, R., Wirth, M., Bony, S., Crewell, S., Ehrlich, A., Forster, L., Giez, A., Gödde, F., Groß, S., Gutleben, M., Hagen, M., Hirsch, L., Jansen, F., Lang, T., Mayer, B., Mech, M., Prange, M., Schnitt, S., Vial, J., Walbröl, A., Wendisch, M., Wolf, K., Zinner, T., Zöger, M., Ament, F., and

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