

Anmeldung eines Themas für eine Bachelorarbeit

Thema Datum (01.12.2020)	Impact of clouds on heating rate profiles in the central Arctic measured by a tethered balloon probe during MOCCHA (supervision in English)
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Kurzbeschreibung:	Up- and downward solar and terrestrial radiation were measured with a tethered balloon sonde in the central Arctic atmospheric boundary layer during the ship cruise MOCCHA in 2018. These measurements will be used to derive profiles of the net radiation. Including the air density, the atmospheric heating rates can be calculated. The heating rates will be interpreted with respect to the atmospheric conditions (temperature inversions, presence of cloud layers) and compared to previous measurements in different seasons and location, like PASCAL.
Literatur:	Egerer, U., Gottschalk, M., Siebert, H., Ehrlich, A., and Wendisch, M.: The new BELUGA setup for collocated turbulence and radiation measurements using a tethered balloon: first applications in the cloudy Arctic boundary layer, <i>Atmos. Meas. Tech.</i> , 12, 4019–4038, https://doi.org/10.5194/amt-12-4019-2019 , 2019. Vüllers, J., Achtert, P., Brooks, I. M., Tjernström, M., Prytherch, J., and Neely III, R.: Meteorological and cloud conditions during the Arctic Ocean 2018 expedition, <i>Atmos. Chem. Phys. Discuss.</i> , https://doi.org/10.5194/acp-2020-219 , in review, 2020. http://www.aces.su.se/research/projects/microbiology-ocean-cloud-coupling-in-the-high-arctic-moccha/