

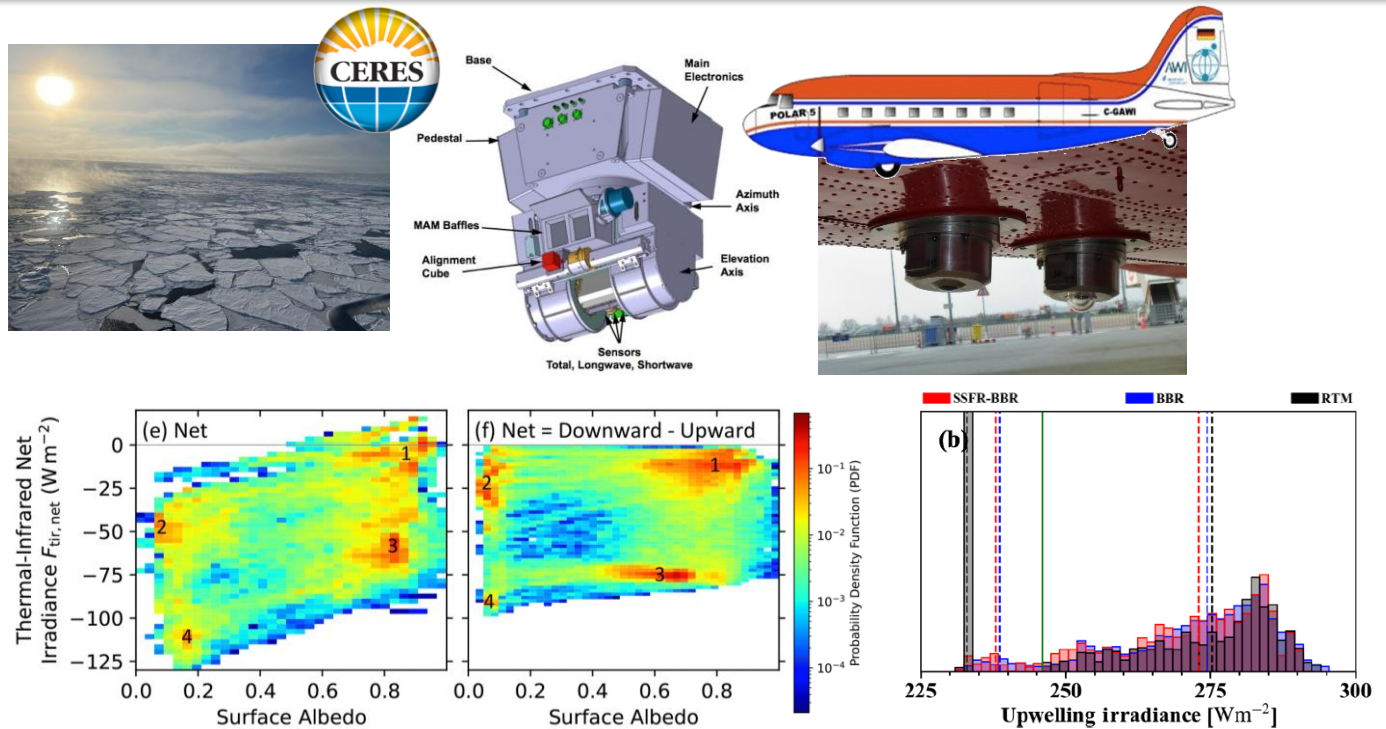
Announcement of a topic for

Seminar Research
Seminar Methods
Master Thesis (please mark one or more)

Topic	Comparison of Arctic surface radiative energy budget (REB) from airborne and satellite observations
Date	available from 26. August 2024
Supervisor (contact)	Univ.-Prof. Dr. Manfred Wendisch Leipzig Institute for Meteorology (LIM) Stephanstr. 3, 04103 Leipzig, Germany +49 341 97-32851 (Phone)
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Second reviewer	Prof. Dr. Andreas Macke, TROPOS
Short description	<p>Master Thesis:</p> <ul style="list-style-type: none"> - statistical analysis of airborne measurements of near-surface REB from different campaigns in the Arctic - comparison of airborne REB observations with satellite products (CERES) - sensitivity study of surface REB to assess discrepancy reasons - simulation of surface REB using satellite cloud products (MODIS) <p>Sem. Research:</p> <ul style="list-style-type: none"> - REB in the Arctic depending on environmental conditions - observational methods of REB (ground-based, airborne, satellite) - cloud radiative effect (CRE) <p>Sem. Methods:</p> <ul style="list-style-type: none"> - airborne radiation measurements - atmospheric radiative transfer - retrieval of radiative and cloud properties from satellite remote sensing
Literature	<ul style="list-style-type: none"> - Wendisch, M. et al. (2023): Effects of variable ice–ocean surface properties and air mass transformation on the Arctic radiative energy budget, Atmos. Chem. Phys., doi: 10.5194/acp-23-9647-2023. - Becker, S. et al. (2023): Airborne observations of the surface cloud radiative effect during different seasons over sea ice and open ocean in the Fram Strait, Atmos. Chem. Phys., doi: 10.5194/acp-23-7015-2023. - Loeb, N. G. et al. (2016): Earth’s top-of-atmosphere radiation budget, ScienceDirect, Reference Module in Earth Systems and Environmental Sciences. doi: 10.1016/B978-0-12-409548-9.10367-7. - Chen, H. et al. (2021): The effect of low-level thin arctic clouds on shortwave irradiance: evaluation of estimates from spaceborne passive imagery with aircraft observations, Atmos. Meas. Tech., doi: 10.5194/amt-14-2673-2021.

Group Atmospheric Radiation

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