

“Exploring the marine troposphere from ship-based and coastal observations”

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Venue: Due to the currently applicable contact restrictions and hygiene regulations, the lecture will be broadcast online

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Abstract

After a short introduction into the overall goals of TROPOS in general and more specifically its marine-oriented atmospheric research, a couple of examples from recent ship- and coastal-based field observations are presented. Since 2009, TROPOS is regularly participating in the Atlantic transects of RV Polarstern with underway observations of aerosols, clouds and the surface radiation budget. One example shows the strong cloud and ocean surface induced variability of downwelling solar radiation at the sea surface and below. Measurements of cloud-relevant aerosols, namely cloud condensation nuclei and ice nucleating particles, are contrasted between Arctic, Antarctic and tropical marine environments. The results are pointing to a strong marine source of biogenic particles that are responsible for warm ice formation. Here, the so-called marine surface microlayer provides an important environment by enrichment of biogenic material and its transport into the atmosphere. Long term remote sensing and in-situ observations of aerosols and clouds in the polluted Northern and the more pristine Southern hemisphere provide insights into the role of aerosols in cloud and ice formations. Finally, results from the pre-MOSAiC campaign PASCAL on Arctic aerosols and clouds and radiation as well as first analysis of lidar observations of persistent smoke plumes over the central wintertime Arctic as observed during MOSAiC are presented.

Short CV

Academic qualification

1982-1985	Student of Physics at the University of Cologne
1986-1990	Student of Physics at the University of Cologne
1990	Dipl. Physik (Master in Physics), University of Cologne
1994	Dr. rer. nat. (PhD Geosciences), University of Hamburg
2002	PD Dr. habil (Meteorology), University of Kiel

Research Experience

1993-1994	Postdoc at GKSS Research Center Geesthacht, cirrus cloud radiative transfer
1995-1996	Postdoc at Columbia University and NASA Goddard Institute for Space Studies
1997-2002	Assistant Professor (Assistent, C1) at the Institute for Marine Research (IFM, now IFM-GEOMAR)
2003	C3 Guest Professor at the University of Munich, Meteorological Institute
2002-2004	Assistant Professor (Oberassistent, C2) at IFM-GEOMAR
2004-2009	C3 Professor for Meteorology at IFM-GEOMAR
2010-	W3 Professor for Atmospheric Physics at the University of Leipzig and Director of the Leibniz Institute for Tropospheric Research