

Bridging Observations Across Scales to Understand the Summer Arctic Cloud-Covered Lower Troposphere

Joseph Sedlar

Swedish Meteorological and Hydrological Institute Norrkoping, Sweden

Over the Arctic, persistent cloudiness and variable boundary layer structure pose serious problems for accurate numerical simulation of these phenomena. The issue is generally compounded by insufficient observational data, which are necessary for understanding processes and improvement of physical parameterizations.

In this presentation, observations spanning a broad range of spatial and temporal scales, including cloud-turbulence scales and up to pan-Arctic scales, are explored. Statistics and decomposition techniques are applied to understand the role of cloud-driven dynamics versus larger meso- and synoptic-scale forcings during the Arctic summer, to quantify their relative importance on the lower tropospheric structure. A particular focus of this presentation is devoted to highlighting the mechanisms supporting the decoupled nature between near-surface turbulence and mixed-phase cloud-driven mixing. The impact of poleward advection on components of the atmospheric energy budget is also analyzed.

<u>SPECIAL DAY & TIME</u> This seminar will be webcast live at: http://ucarconnect.ucar.edu/live

Recorded seminar link can be viewed here: https://www.mmm.ucar.edu/events/seminars

Tuesday, 18 April 2017, 1:30 PM Refreshments 1:15 PM NCAR-Foothills Laboratory 3450 Mitchell Lane Bldg. 2, Main Auditorium, Room 1022



