

## **Simultaneous polarimetric X-band and Ka-band radar observations of clouds and mixed phase precipitation over the North Slope of Alaska**

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North Slope Alaska's Barrow site is one of the Atmospheric Radiation Measurement Climate Research Facilities (ARM) sites providing data about cloud and radiative processes at high latitudes in the Arctic region. The radar site is at a latitude of 71° 19' 23.73" N in Barrow in Alaska. The Barrow site has numerous active and passive instruments. This paper is focused on the results from cloud and precipitation radars at the site. There are a few radars namely X-band dual-polarized precipitation radar (XSAPR), Ka-band zenith pointing cloud radar (KAZR) as well as Ka-band scanning cloud radar (SACR). This paper consists of three parts namely:

- a) Documenting the properties and error structure of the radar observations towards the purposes of cloud and precipitation measurements for the arctic region and
- b) Testing of advanced techniques to cross compare the cloud to precipitation transition
- c) Mapping of coordinated dual-polarization measurement to cloud and precipitation properties.

Overview results of polarimetric observations as well as observations from an Intensive Observation period IOP are described.