Dataset name: **iCUPE Dataset (DS) from Deliverable 4.2.1:**

Dataset for ground-validation of precipitation measurements in high-latitudes

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The dataset is based on coordinated ground-based observations of precipitation microphysical properties and ground-based radar observations. This way the dataset allows for comprehensive characterization of precipitation, especially winter precipitation, at the measurement site and to extend those measurements spatially by means of weather radar measurements to facilitate validation of satellite-based observations.

The data recorded by the W-band cloud radar at the University of Helsinki SMEAR-II station in Hyytiälä, Finland. The dataset includes both spectral moment and Doppler spectra radar data collected starting from 24 Oct 2017 through 31 Dec 2019. The lvl1 data can be read by using Matlab scripts published on https://github.com/dmoisseev/Hyytiala-Radar-Data-Analysis.

The cloud radar is manufactured by Radiometer Physics GmbH. The instrument description can be found on the manufacturer's web page.

The dataset can be found at:
https://etsin.fairdata.fi/dataset/1583dc19-1cb8-441f-b336-22858b366cb1

The collocated ground-based observation of ice particle properties are given in MAT data format and can be directly be loaded into Matlab. The ice particle masses are retrieved using von Lerber et al. (2017) method. All variables are given in cgs units.

References:

von Lerber, A., D. Moisseev, L.F. Bliven, W. Petersen, A. Harri, and V. Chandrasekar, 2017: Microphysical Properties of Snow and Their Link to Ze-S Relations during BAECC 2014. J. Appl. Meteor. Climatol., 56, 1561-1582, https://doi.org/10.1175/JAMC-D-16-0379.1

Moisseev, D.: Snow microphysical properties retrieved from PIP observations collected in Hyytiälä on 2014–2015, zenodo,https://doi.org/10.5281/zenodo.3977959, 2020.

Leskinen M. and D. Moisseev, Hyytiala W-band cloud radar 2017-2019, https://doi.org/10.23729/5aab6b78-90c9-49ab-8264-f4168528a0f3, 2020