

**Title:** VORTEX-SE 2017 UAH RaDAPS Micro Rain Radar Dataset

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### **1.0 Dataset Overview**

Rapidly Deployable Atmospheric Profiling System (RaDAPS) is a mobile atmospheric profiling system that contains a 915 MHz wind profiler, a Microwave Profile Radiometer, a ceilometer, Micro Rain Radar, and a mounted surface station.

### **2.0 Instrument Description**

The Metek Micro Rain Radar (MRR-2) is a 24 GHz, 50 mW radar. More information can be found at Metek's website.

### **3.0 Data Collection and Processing**

Data was collected during each IOP. Occasionally, issues would arise that prevented data from being recorded. If this occurred, it is noted in section 5. Data is collected every minute. Metek performs processing on the data and outputs 3 main files:

- Processed
- Average
- raw

The averaged data is then used to produce a netCDF file which is provided. Raw data can be provided upon request.

### **4.0 Data Format**

The UAH RaDAPS MRR data filename convention is mrr.YYYYMMDD.nc where:

YYYY -> year

MM -> month

DD -> day

pro -> netCDF file format

The file header information is provided below:

Identifier	Meaning	Unit
MRR\ rangegate	height	m
MRR\ spectralclass	Bin # (63 bins total)	none
MRR_H	height	m
MRR_TF	Transfer Function	none
MRR_F	Spectral Reflectivity	dB
MRR_D	Drop Densities	m <sup>-3</sup> mm <sup>-1</sup>
MRR_N	Number	#
MRR_K	Unused	NA
MRR_Capital_Z	Radar Reflectivity	dBZ
MRR_Small_Z	Attenuated Radar Reflectivity	dBZ
MRR_PIA	Path Integrated Attenuation	dB
MRR_RR	Rain Rate	mm/h
MRR_LWC	Liquid Water Content	gm <sup>-3</sup>
MRR_W	Fall Velocity	m/s
AVE	Averaging time if applicable	Seconds
STP	Height resolution	meters
ASL	Height of ground level above sea level	meters

## 5.0 Data Remarks

IOP 1A - No Data

IOP 1B - MRR data includes data well before IOP begin date and well after IOP end of ops

IOP 2 - MRR data records begin at 2131 UTC