

Title: VORTEX-SE Meso18-19 UAH RaDAPS 915 MHz Wind Profiling Radar Dataset

Authors:

Preston Pangle ptp0001@uah.edu
Kevin Knupp(PI) kevin.knupp@uah.edu

University of Alabama In Huntsville
University of Alabama In Huntsville

1.0 Dataset Overview

The UAH 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. RaDAPS often operated 24 hours a day when located at SWIRLL. Unless time periods are provided, RaDAPS data will include data for the either most or entire IOP length.

IOP 0

Location: 34.72484, -86.64625 (UAH)

IOP 1

Location: Location: 34.725, -86.647 (UAH)

IOP 2

Location: 34.725, -86.647 (UAH)

IOP 4

Location: 34.725, -86.647 (UAH)

IOP5

Time Period: 2019/02/23 2131Z - 2019/02/24/0300Z

Location: 34.7862, -88.2089

IOP 7

Time Period: 2019/03/09 1830Z - 2019/03/10 0100Z

Location: 34.8078, -88.2595

IOP8

Time Period: 2019/04/13 2300Z - 2019/04/14 0800Z

Location: 34.8077, -88.2597

IOP9

Time Period: 2019/04/18 1700Z - 2019/04/19 0150Z

Location: 34.0848, -87.5943

2.0 Instrument Description

RaDAPS utilizes a Radiometrics Raptor XBS-BL 915 MHz radar wind profiler.

3.0 Data Collection and Processing

The data files provided are Radiometrics processed files. Processed data files are created every 5 and 60 minutes. No processing outside of the Radiometrics processing has been completed.

4.0 Data Format

NetCDF and raw Data files are provided. There will be one netCDF file for each resolution even if the instrument operated for multiple days. The netCDF naming convention is as follows:

RaDAPS_915_YYYYMMDD_resolution.nc where

RaDAPS -> Platform

915 -> Instrument

YYYY -> 4-digit year

MM -> 2-Digit month

DD -> 2-digit day

Resolution -> Time resolution of data

Raw Data file naming convention is as follows:

wYYYY-MM-DD-HH-mm-ss.asd where

w -> system constant

YYYY -> 4-digit year

MM -> 2-digit month

DD -> 2-digit day

HH -> UTC hour file was created

mm -> UTC minute file was created

ss -> UTC seconds file was created

.asd -> processed data file extension

Raw data file headers are formatted as follows in the example below:

Row #

1	uah	uah							
2	wind	1.000							
3	3443.47610	-8638.76617	210.0						
4	2019-01-19	02:15:00	00:00						
5	SDR_1_6B	1 250 1.292	1	33.85					
6	23.3	6 0.00	60.00	120.00	180.00	240.00	300.00		
7	63	2048	26	522					
8	63	300	300						

9| HT SPD DIR QC U V W SD_H SD_W VEL VEL
 VEL VEL VEL VEL NUM NUM NUM NUM NUM NUM POW POW POW
 POW POW POW SNR SNR SNR SNR SNR SNR WDT WDT
 WDT WDT WDT WDT

- 1 -> uah data
- 2 ->
- 3 -> Latitude, Longitude, Elevation
- 4 -> date recorded
- 5 ->
- 6 -> Azimuth angles recorded
- 7 ->
- 8 ->
- 9 -> Data headers

NetCDF files include the following parameters:

Identifier	Units	Description
decimalTime	UTC Hours	UTC Time in Decimal Hours from 0000 UTC
epochTime	seconds	Seconds Since 00 UTC 1970 01 01
Height	Meters	Height Above ground level
latitude	Degrees	Degrees North
Longitude	Degrees	Degrees East
Altitude	Meters AGL	Altitude of the RaDAPS Platform
u	m/s	U-Wind Component
v	m/s	V-Wind Component
w	m/s	W-Wind Component
qcTag	Unitless	Quality control tag for winds, higher is better
SNR	dB	Singal-To-Noise_Ratio

5.0 Data Remarks

- Data for IOP 2 only includes 60 minute resolution
- No 915 data for IOP 3