Title: VORTEX-SE Meso18-19 UAH RaDAPS Ceilometer Dataset

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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 either most or the 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 3
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

UAH Utilizes Vaisala CL51. Measurements are made every 15 seconds with 30 m gate spacing.The ceilometer is a pulsed laser that operates at 0.905 um. The range is from 0 to 15 km, vertical resolution is 10 m and time resolution is 15 s.

3.0 Data Collection and Processing

Data is collected every 15 seconds. No processing has been completed.

4.0 Data Format

The Meso18-19 ceilometer dataset is provided in netCDF format.
The file naming convention is: cloYYYYMMDD.nc where:
clo   -> Indicates Ceilometer Data
YYYY -> Year
MM   -> Month
HH   -> Hour
.nc   -> File Extension
The netCDF files include the following data:

Identifier	Units	Description
epochTime	seconds	Seconds Since 00 UTC 1970 01 01
decimalTime	Decimal	UTC Time in decimal hours from 00 UTC
status	unitless	status of detection
Status	unitless	Status of system
CB1	ft	1st cloud base height detected
CB2	ft	2nd cloud base height detected
CB3	ft	3rd cloud base height detected
scale	unitless	scaling factor applied to backscatter
resolution	m	Vertical resolution
tilt	degrees	Ceilometer tilt from zenith
background	mV	Background light
height	m	Height above ground
Backscatter	$1*e^5$ srad/km	sensitivity-normalized backscatter

5.0 Data Remarks

- No ceilometer data for IOP6,IOP7, or IOP9 due to instrument issues.