Title: PERiLS UAH MAPNet MoDLS Ceilometer Dataset

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1.0 Dataset Overview

The UAH Mobile Atmospheric Profiling Network (MAPNet) Mobile Doppler Lidar and Soundings (MoDLS) was deployed with the MPR for all 5 PERiLS deployments. This dataset contains the ceilometer data collected by the MoDLS ceilometer. Logbooks are provided for the user's reference for any data collection issues, etc.

IOP 1
Time Period: 2023/02/16 1356 to 2023/02/17 0130Z
Location: 32.8334, -88.143 elevation: 26 m

IOP 2
Time Period: 2022/03/02 2350Z to 2022/03/03 11Z
Location: 34.43138, -90.73124 elevation: 60 m

IOP 3
Time Period: 2022/03/24 1705Z to 2022/03/25 0225Z
Location: 33.5592711, -90.8057507 elevation: 81 m

IOP 4
Time Period: 2022/03/31 1917Z to 2022/04/01 0800Z
Location: 34.7969441, -87.1527087 elevation: 239 m

IOP 5
Time Period: 2022/04/05 1115Z to 2022/04/05 1830Z
Location: 35.3876997, -90.2712585 elevation: 66 m

2.0 Instrument Description

MoDLS utilizes a Jenoptik CHM-15k ceilometer. The ceilometer operates at 10.64 μm with a height resolution of 15 m and ranges from 5 m - 15km AGL. The temporal resolution is 15 seconds.

More information regarding the MoDLS ceilometer and the MoDLS system can be found here: https://www.nsstc.uah.edu/mapnet/facilities/modls.php

3.0 Data Collection and Processing

Data is collected and averaged at 15 sec intervals. No additional data processing has been completed.

4.0 Data Format

The CHM15K ceilometer writes data to a netCDF file as it collects data. The data file includes several variables including 15m and 5m resolution backscatter. Please refer to the CHM15_Manual.pdf file for more in depth file variable definitions. File naming convention is as follows: YYYYMMDD_MoDLS_CHMstddrd_000.nc where:

YYYY -> Year
MM -> Month
DD -> Day
CHMstddrd_000 -> Ceilometer Device Number