Title: VORTEX-SE Meso18-19UAH MoDLS LiDAR Dataset

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1.0 Dataset Overview

The UAH Mobile Operated Doppler Lidar System (MoDLS) is housed within a trailer that also contains a Microwave Profile Radiometer. The main vehicle that pulls this system has a mobile surface station that is mounted on top of the vehicle. Data is separated into directories by IOPs. Then, data is separated into subdirectories by date.

> IOP 1
> Location: 34.632487, -85.972167; Bearing: 120 Deg
>
> IOP 3
> Location: 34.725, -86.657 (UAH) Bearing: 0 deg
>
> IOP 4
> Location: 34.725, -86.657 (UAH) Bearing: 0 deg
>
> IOP 5
> Location: 34.725, -86.657 (UAH) Bearing: 0 deg
>
> IOP6
> Location: 34.725, -86.657 (UAH) Bearing: 0 deg
>
> UFO 7
> Location: 34.725, -86.657 (UAH) Bearing: 0 deg
>
> IOP 8
> Location: 34.725, -86.657 (UAH) Bearing: 0 deg
>
> IOP 9
> Location: 34.725, -86.657 (UAH) Bearing: 0 deg

2.0 Instrument Description

The UAH MoDLS utilizes a Halo Photonics Stream Line Scanning Doppler Lidar. The instrument is mounted on a retractable rack inside a trailer that extends upward, allowing the lidar lens to be located outside.

3.0 Data Collection and Processing
No Processing has been completed.

4.0 Data Format
Each dataset contains 5 file types and a corresponding netCDF File. The netCDF file compiles all data files of each type for each day. Data contain in the netCDF file includes:

Identifier	Units	Description
decimalTime	UTC Hours	UTC Time in Decimal Hours from 0000 UTC
height	meters	Height AGL
elevation	Deg	Elevation angle above horizon
azimuth	degrees	Azimuth angle
velocity	m/s	Vertical velocity
intensity	unitless	Intensity as computed as SNR+1
backscatter	'm(^-1) sr^(-1)	Attenuated Backscatter

 NetCDF file naming convention is as follows:
MoDLS_DWL_User-YYYYMMDD-HHmm_Gates.nc where:
MoDLS_DWL -> Platform
User -> Filetype (User = User defined profile, Wind = Wind Profile, Stare = Vertical Stare)
YYYY -> Year
MM -> Month
DD -> Day
HHmm -> Hours and minutes
Gates -> Number of Gates

The raw data file naming convention is as follows:
- Processed_Wind_Profile_58_YYYYMMDD_HHmmSS.hpl
- Stare_58_YYYYMMDD_HH.hpl
- User2_58_YYYYMMDD_HHmmSS.hpl
- VAD_58_YYYYMMDD_HHmmSS.hpl
- Wind_Profile_58_YYYYMMDD_HHmmSS.hpl
-

Where:
Processed   -> Halo processed data file
Stare   -> Vertical Stare file

User2	-> User defined file settings
VAD	-> Vertical Azimuth Display Profile
Wind_Profile	-> Raw Wind Profile file
YYYY	-> year
MM	-> Month
DD	-> Day
HH	-> Hour
mm	-> Minutes
SS	-> seconds
.hpl	-> Halo Photonics Lidar file

5.0 Data Remarks

NetCDF files combine all files of the same type for each day regardless of difference in azimuth.