

NOAA/ARL/ATDD Rawinsonde Metadata
MESO 18-19

PIs

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1.0 Data set overview

To support research activities during Meso 18-19, NOAA/ARL/ATDD (NOAA Air Resources Laboratory Atmospheric Turbulence and Diffusion Division) launched rawinsondes during the intensive observation periods (IOPs) that comprised the campaigns.

2.0 Instrument description

NOAA/ARL/ATDD used GRAW DFM-09 rawinsondes which were initialized using the GRAW software package, version 5.10.12.3, installed onto one Dell laptop (Dell Latitude E5570). The accuracy and resolution of the variables measured by the rawinsondes are listed in Table 1.

Table 1: Manufacturer-stated accuracy and resolution for each of the variables sampled by the GRAW DFM-09 rawinsondes.

Temperature resolution	0.1°C
Temperature accuracy	<0.2°C
Humidity resolution	1%
Humidity accuracy	<5%
Pressure accuracy	<0.3 mb
Geopotential height accuracy	<10 m
Wind speed accuracy	<0.2 m s ⁻¹
Horizontal position accuracy	<5 m

3.0 Data Collection and Processing

During the post-processing, we filtered times during which the rawinsonde was on the ground. Data recorded when the rawinsondes were descending were also removed from the post-processed files, as were any obvious data outliers. Missing values are denoted as 9999.

The release locations used were:

Montgomery, Alabama: 32.461N 86.404W

Auburn, Alabama: 32.579N 85.497W

Sikeston, Missouri: 36.890N 89.537W

SE Montgomery, Alabama: 32.363N 86.138W

4.0 Data Format

The naming convention for each of the rawinsonde files is: *upperair.TEAM_sondeYYYYMMDDHHHH.LOCATION_SHARPPy*. For example, the file entitled *upperair.ATDD_sonde.201811300000.Montgomery_AL_SHARPPy* contains data from the rawinsonde launch occurring at 0000 UTC 30 November 2018 from Montgomery, AL by ATDD. The format of the data columns contained within each file is listed in Table 2.

Table 2: Description of each column contained in the rawinsonde data files.

Column	Variable Description (units)
1	Pressure (mb)
2	Height (m above ground level)
3	Temperature (°C)
4	Dew point (°C)

5	Wind direction (°)
6	Wind speed (kt)

5.0 Data Remarks

There are no known data quality issues with the NOAA/ARL/ATDD rawinsonde measurements. Any questions about the data set should be directed to Temple R. Lee (temple.lee@noaa.gov).