

Seeded and Natural Orographic Wintertime clouds—the Idaho Experiment (SNOWIE)
U. of Colorado Microwave Radiometer @ Smith Ferry

1. **Dataset Title:** Upper Air: Radiometer - CU Radiometer Data at Smith's Ferry [CU]

2. **Dataset Author(s):**

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3. **Time of Interest –**

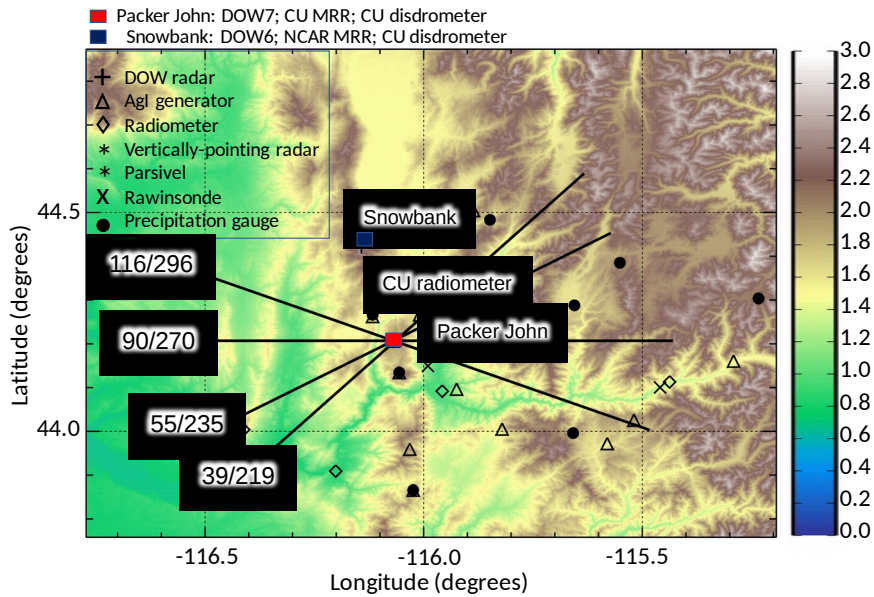
2017/01/07 00:00:00 to 2017/01/07 23:55:00
2017/01/08 00:00:00 to 2017/01/08 23:55:00
2017/01/09 00:00:00 to 2017/01/09 23:55:00
2017/01/10 00:00:00 to 2017/01/10 23:55:00
2017/01/11 00:00:00 to 2017/01/11 23:55:00
2017/01/18 00:00:00 to 2017/01/19 23:55:00
2017/01/19 00:00:00 to 2017/01/19 23:55:00
2017/01/20 00:00:00 to 2017/01/20 16:40:00
2017/01/20 00:00:00 to 2017/01/20 20:05:00
2017/01/20 20:10:00 to 2017/01/20 20:13:00
2017/01/20 20:28:00 to 2017/01/20 20:20:00
2017/01/20 20:22:00 to 2017/01/20 23:54:00
2017/01/21 00:00:00 to 2017/01/21 23:54:00
2017/01/22 00:00:00 to 2017/01/22 23:55:00
2017/01/23 00:00:00 to 2017/01/23 23:55:00
2017/01/31 00:00:00 to 2017/01/31 23:55:00
2017/02/03 00:00:00 to 2017/02/03 23:59:00
2017/02/04 00:00:00 to 2017/02/04 23:55:00
2017/02/05 00:00:00 to 2017/02/05 23:54:00
2017/02/05 20:19:00 to 2017/02/05 23:54:00
2017/02/07 00:00:00 to 2017/02/07 23:55:00
2017/02/16 00:00:00 to 2017/02/16 23:54:00
2017/02/17 00:00:00 to 2017/02/17 08:24:31
2017/02/22 18:11:00 to 2017/02/18 23:55:00

2017/03/04 00:00:00 to 2017/03/04 23:55:00
 2017/03/05 00:00:00 to 2017/03/05 23:55:00
 2017/03/07 00:00:00 to 2017/03/07 23:54:00
 2017/03/09 00:00:00 to 2017/03/09 23:54:00
 2017/03/16 00:00:00 to 2017/03/16 23:54:00

no data available for IOPs14-17 (18 Feb – 21 Feb)

4. **Area of Interest** –

Smith Ferry: 44.180462, -116.047400 @ 1386.1 m MSL



5. **Data Frequency** - Frequency of data collection continuously during IOPs; data sampled every 1-2 minute.
6. **Data Spatial Type** - readable ASCII text – csv format

Example of the data format. Data is being recorded following the data stamp in the 3rd column (10, 30, 80, 100, 200, 300, 400):

30 – Geolocation data

200 - Surface observations of temperature, humidity pressure etc.

400 – retrieval output of temperature (401), vapor density (402), liquid (403), and relative humidity (404) at the height levels (in meters) shown under 400 (0.00, 0.05, 0.10, 0.15, ...) for

- zenith (denoted as Zenith),
- 15deg above the horizon (denoted as Angle15(AZ-000)) towards the north (N), south (S), and an average between north and south (A), and
- 45deg above the horizon (denoted as Angle45(AZ-000)) towards the north (N), south (S), and an average between north and south (A).

300 – Integrated vapor, integrated liquid and cloud base for zenith, 15deg north, 15deg south, 15deg average, 45deg north, 45deg south, 45deg average

```
Record,Date/Time,10,Tamb(K),Rh(%),Pres(mb),Tir(K),Rain,Vint(cm),Lqint(mm),Clldb,0.00,0.10,0.20,0.30,0.40,0.50,0.60,0.70
Record,Date/Time,30,GPS Date/Time,Latitude,Longitude,Magnetic Variation,Status,Quality,Number Satellites,Altitude
Record,Date/Time,80,ID,SNR,Az(deg),El(deg),Tamb(K),Rh(%),Pres(mb),Tir(K),Rain,Vint(cm),ZVint(cm),VDly(cm),ZVDly(cm)
Record,Date/Time,100,Record Type,Title
Record,Date/Time,200,Tamb(K),Rh(%),Pres(mb),Tir(K),Rain
Record,Date/Time,300,Int. Vapor(cm),Int. Liquid(mm),Cloud Base(km)
Record,Date/Time,400,LV2 Processor,0.00,0.05,0.10,0.15,0.20,0.25,0.30,0.35,0.40,0.45,0.50,0.60,0.70
1,03/16/2017 00:00:25,101,401,Temperature (K)
2,03/16/2017 00:00:25,101,402,Vapor Density (g/m^3)
3,03/16/2017 00:00:25,101,403,Liquid (g/m^3)
4,03/16/2017 00:00:25,101,404,Relative Humidity (%)
```

Example of one data record (explanations are based on the number in the third column after record, date, time):

31 – geolocation

201 – surface observations

401-404 Temperature, vapor density, liquid, RH profiles for zenith scan

301 – integrated quantities for zenith scan

401-404 Temperature, vapor density, liquid, RH profiles for 15deg north, 15deg south, 15deg average

301 – integrated quantities for zenith scan for 15deg north, 15deg south, 15deg average

401-404 Temperature, vapor density, liquid, RH profiles for 45deg north, 45deg south, 45deg average





























301 – integrated quantities for zenith scan for 45deg north, 45deg south, 45deg average

27,03/16/17 00:00:34	31,03/16/2017 00:00:34,	4418.0462,	Geolocation (lat/lon/height)	1386.1
28,03/16/17 00:00:37	201, 276.9790,	86.3700, 860.2120,	Surface obs (Tamb, RH, Presm Tir Rain)	
29,03/16/17 00:02:05	401,Zenith,	276.979,279.531,281.402,282.545	zenith temperature,	282.926,282.939,282.71
30,03/16/17 00:02:05	402,Zenith,	5.425, 5.677, 5.893, 5.842	vapor density	, 5.080, 4.864, 4.63
31,03/16/17 00:02:05	403,Zenith,	0.001, 0.010, 0.012, 0.001	liquid	, 0.011, 0.010, 0.00
32,03/16/17 00:02:06	404,Zenith,	86.370, 76.812, 72.146, 67.014	RH	, 54.479, 51.453, 50.00
33,03/16/17 00:02:06	301,	1.370, 0.342, 2.250,		
34,03/16/17 00:02:07	401,Angle15(AZ-000)(N)	276.979,280.567,282.545	15deg North: temperature	33.706,283.471,28
35,03/16/17 00:02:07	401,Angle15(AZ-000)(S)	276.979,280.668,282.545	15deg South: temperature	34.022,283.889,28
36,03/16/17 00:02:07	401,Angle15(AZ-000)(A)	276.979,280.618,282.545	15deg Avera: temperature	33.863,283.677,28
37,03/16/17 00:02:07	402,Angle15(AZ-000)(N)	5.425, 5.827, 6.056, 6.056	15deg North: vapor density	5.494, 5.091, 5.091
38,03/16/17 00:02:07	402,Angle15(AZ-000)(S)	5.425, 6.056, 6.056, 6.056	15deg South: vapor density	5.787, 5.423, 5.423
39,03/16/17 00:02:07	402,Angle15(AZ-000)(A)	5.425, 5.939, 6.056, 6.056	15deg Avera: vapor density	5.644, 5.260, 5.260
40,03/16/17 00:02:07	403,Angle15(AZ-000)(N)	0.001, 0.001, 0.001, 0.001	15deg North: liquid	0.001, 0.001, 0.001
41,03/16/17 00:02:07	403,Angle15(AZ-000)(S)	0.001, 0.001, 0.001, 0.001	15deg South: liquid	0.001, 0.001, 0.001
42,03/16/17 00:02:07	403,Angle15(AZ-000)(A)	0.001, 0.001, 0.001, 0.001	15deg Avera: liquid	0.001, 0.001, 0.001
43,03/16/17 00:02:08	404,Angle15(AZ-000)(N)	86.370, 72.287, 67.014, 67.014	15deg North: RH	55.219, 52.238, 52.238
44,03/16/17 00:02:08	404,Angle15(AZ-000)(S)	86.370, 73.735, 69.014, 69.014	15deg South: RH	57.420, 54.417, 54.417
45,03/16/17 00:02:08	404,Angle15(AZ-000)(A)	86.370, 73.002, 68.014, 68.014	15deg Avera: RH	56.328, 53.338, 53.338
46,03/16/17 00:02:08	301,	1.348, 0.522, 2.250,	15deg North: IV, IL, CB	
47,03/16/17 00:02:08	301,	1.437, 0.487, 2.250,	15deg South: IV, IL, CB	
48,03/16/17 00:02:08	301,	1.392, 0.504, 2.250,	15deg Avera: IV, IL, CB	
49,03/16/17 00:02:09	401,Angle45(AZ-000)(N)	276.979,279.829,281.660	45deg North: temperature	418,283.216,28
50,03/16/17 00:02:09	401,Angle45(AZ-000)(S)	276.979,279.799,281.600	45deg South: temperature	460,283.356,28
51,03/16/17 00:02:09	401,Angle45(AZ-000)(A)	276.979,279.814,281.630	45deg Avera: temperature	439,283.286,28
52,03/16/17 00:02:09	402,Angle45(AZ-000)(N)	5.425, 5.584, 5.800, 5.800	45deg North: vapor density	189, 4.887, 4.887
53,03/16/17 00:02:09	402,Angle45(AZ-000)(S)	5.425, 5.594, 5.830, 5.830	45deg South: vapor density	264, 4.984, 4.984
54,03/16/17 00:02:09	402,Angle45(AZ-000)(A)	5.425, 5.589, 5.820, 5.820	45deg Avera: vapor density	227, 4.935, 4.935
55,03/16/17 00:02:09	403,Angle45(AZ-000)(N)	0.001, 0.001, 0.010, 0.010	45deg North: liquid	0.011, 0.001, 0.001
56,03/16/17 00:02:09	403,Angle45(AZ-000)(S)	0.011, 0.011, 0.010, 0.010	45deg South: liquid	0.012, 0.011, 0.011
57,03/16/17 00:02:09	403,Angle45(AZ-000)(A)	0.010, 0.010, 0.010, 0.010	45deg Avera: liquid	0.011, 0.010, 0.010
58,03/16/17 00:02:10	404,Angle45(AZ-000)(N)	86.370, 74.338, 68.260, 68.260	45deg North: RH	794, 50.183, 50.183
59,03/16/17 00:02:10	404,Angle45(AZ-000)(S)	86.370, 74.445, 68.510, 68.510	45deg South: RH	064, 50.488, 50.488
60,03/16/17 00:02:10	404,Angle45(AZ-000)(A)	86.370, 74.383, 68.380, 68.380	45deg Avera: RH	916, 50.322, 50.322
61,03/16/17 00:02:10	301,	1.363, 0.382, 2.000,	45deg North: IV, IL, CB	
62,03/16/17 00:02:10	301,	1.339, 0.381, 2.000,	45deg South: IV, IL, CB	
63,03/16/17 00:02:10	301,	1.351, 0.381, 2.000,	45deg Avera: IV, IL, CB	

7. General Dataset Description

The instrument had a blower working constantly to keep the surface free of snow. Snow around the area was constantly removed. Instrument was calibrated during the installation. Data were visually inspected and no instrument failure was observed. The instrument was deployed so that “north” is at magnetic north and “south” is at magnetic south. Level0 and level1 data were also recorded and can be requested from the PI.

8. File Names

 2017-01-07_00-00-10_lv2.csv	 2017-02-04_00-00-04_lv2.csv
 2017-01-08_00-00-09_lv2.csv	 2017-02-05_00-00-08_lv2.csv
 2017-01-09_00-00-04_lv2.csv	 2017-02-05_20-19-02_lv2.csv
 2017-01-10_00-00-08_lv2.csv	 2017-02-07_00-00-09_lv2.csv
 2017-01-11_00-00-10_lv2.csv	 2017-02-16_00-00-09_lv2.csv
 2017-01-18_00-00-04_lv2.csv	 2017-02-17_00-00-09_lv2.csv
 2017-01-19_00-00-09_lv2.csv	 2017-02-22_18-11-33_lv2.csv
 2017-01-20_00-00-05_lv2.csv	 2017-03-04_00-00-04_lv2.csv
 2017-01-20_20-10-24_lv2.csv	 2017-03-05_00-00-10_lv2.csv
 2017-01-20_20-18-06_lv2.csv	 2017-03-07_00-00-10_lv2.csv
 2017-01-20_20-22-07_lv2.csv	 2017-03-09_00-00-04_lv2.csv
 2017-01-21_00-00-08_lv2.csv	 2017-03-16_00-00-10_lv2.csv
 2017-01-22_00-00-09_lv2.csv	
 2017-01-23_00-00-10_lv2.csv	
 2017-01-31_00-00-09_lv2.csv	
 2017-02-03_00-00-09_lv2.csv	

9. **Data restrictions** – no data restriction