

Seeded and Natural Orographic Wintertime clouds—the Idaho Experiment (SNOWIE)
U. of Colorado Disdrometer @ Snowbank

1. **Dataset Title:** Land Based: Precipitation - CU Disdrometer Data at Snowbank Site [CU]

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

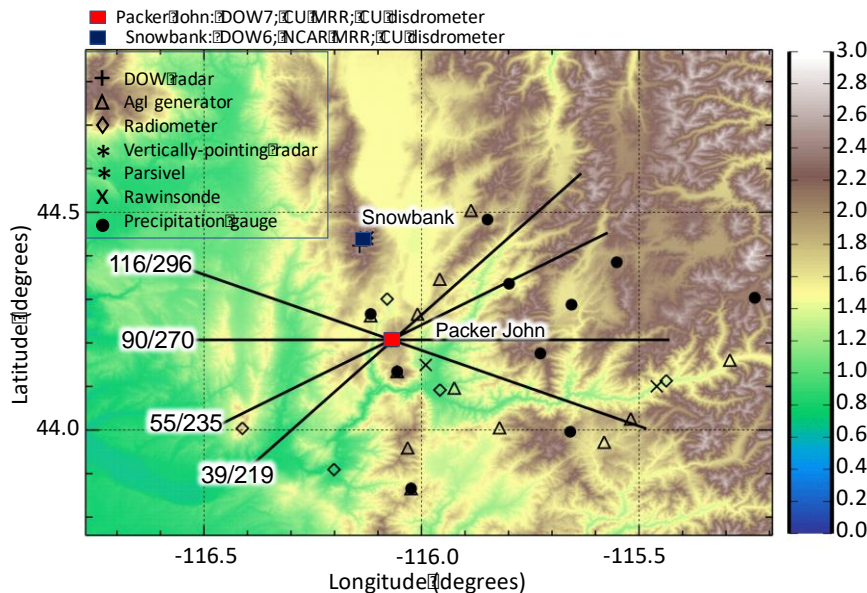
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3. **Time of Interest –**

Each file contains data from 2103 UTC on the day that is indicated in the file name to 2102 UTC for the next day. Files are available for every day between 2017/01/07 till 2017/03/17.

4. **Area of Interest –**

Snowbank Mountain Site (collocated with IPC’s Met and Gauge station as well as NCAR’s MRR; this site is NOT the DOW site): 44.440173; -116.12606 @ 2542 m MSL



5. **Data Frequency** - Frequency of data collection continuously from 7 Jan till 16 March; data sampled every 10 seconds.
6. **Data Spatial Type** - readable ASCII text

No.	Description	Digits	Form	Range	Unit
01	Rain intensity (32 bit ¹¹)	8	0000.000	0.000 ... 9999.999	mm/h
02	Rain amount accumulated (32 bit ¹¹)	7	0000.00	0.00 ... 0300.00	mm
03	Weather code acc. to SYNOP w _g w _r ; Table 4680	2	00	00 ... 99	
04	Weather code acc. to SYNOP ww; Table 4677	2	00	00 ... 99	
05	Weather code METAR/SPECI w'w'; Table 4678	5	+RASN		
06	Weather code according to NWS	4	RLS+		
07	Radar reflectivity (32 bit ¹¹)	6	00.000	-9.999 ... 99.999	dBz
08	MOR visibility in precipitation	5	00000	0 ... 20000	m
09	Sample interval	5	00000	0 ... 03600	s
10	Signal amplitude of the laser strip	5	00000	0 ... 99999	1
11	Number of particles detected and validated	5	00000	0 ... 99999	1
12	Temperature in the sensor housing	3	000	-99 ... 100	°C
13	Sensor serial number	6	123456		
14	Firmware IOP version number	6	2.02.3		
15	Firmware DSP version number	6	2.02.3		
16	Heating current	4	0.00	0.00 ... 4.00	A
17	Power supply voltage	4	00.0	0.0 ... 30.0	V
18	Sensor status	1	0	0 ... 3	see Chapt. 12.1
19	Date/time measuring start	19	00.00.0000 00:00:00	DD.MM.YYYY hh:mm:ss	
20	Sensor time	8	00:00:00	hh:mm:ss	
21	Sensor date	10	00.00.0000	DD.MM.YYYY	
22	Station name	10	XXXXXXXXXX		
23	Station number	4	XXXX		
24	Rain amount absolute (32 bit ¹¹)	7	000.000	0.000 ... 999.999	mm
25	Error code	3	000		
26	Temperature PCB	3	000	-99 ... 100	°C
27	Temperature in the right sensor head	3	000	-99 ... 100	°C
28	Temperature in the left sensor head	3	000	-99 ... 100	°C
30	Rain intensity (16 bit ¹¹) max. 30.000 mm/h	6	00.000	0.000 ... 30.000	mm/h
31	Rain intensity (16 bit ¹¹) max. 1200.0 mm/h	6	0000.0	0.0 ... 1200.0	mm/h
32	Rain amount accumulated (16 bit ¹¹)	7	0000.00	0.00 ... 0300.00	mm
33	Radar reflectivity (16 bit ¹¹)	5	00.00	-9.99 ... 99.99	dBz
34	Kinetic energy	7	000.000	0.000 ... 999.999	J/(m ² h)
35	Snow depth intensity (volume equivalent)	7	0000.00	0.00 ... 9999.99	mm/h
60	Number of all particles detected	8	00000000	0 ... 8192	1
61	List of all particles detected (including size and particle speed)	13	00.000;00.000	0.200 ... 25.000; 0.20 ... 20.000	mm;m/s
90	Field N (d) 1. Value = average volume equivalent diameter (ved) of the 1. class	223	00.0005	-9.999 ... 99.999	log ₁₀ (1/m ³ mm)
91	Field v (d) 1. Value = average particle speed (ps) of the 1. class	223	00.0005	0.000 ... 99.999	m/s
93	Raw data (volume equivalent diameter) 1. Value = number of particles 1. ved/1. ps ... 32. Value = number of particles 32. ved/1. ps; 33. Value = number of particles 1. ved/2. ps ... 64. Value = number of particles 32. ved/2. ps; 65. Value = ...	4095	0005	0 ... 999	1

More detail on the data format can be found on page 29 in <http://www.ott.com/en-us/products/download/operating-instructions-present-weather-sensor-ott-parsivel2/>

Classification according to diameter and velocity is described in Pages 44-45 in <http://www.ott.com/en-us/products/download/operating-instructions-present-weather-sensor-ott-parsivel2/>

7. General Dataset Description

The instrument had the heater turned on high throughout the IOPs. However, we discovered that the window was iced up during strong wind conditions. Field 18 (Sensor status – see list below) will indicate if the sensor was clear or not. Data were visually inspected and no instrument failure was observed.

- 0 = Everything OK
- 1 = Laser protective glass is dirty, but measurements are still possible
- 2 = Laser protective glass is dirty, partially covered. No further usable measurements are possible.
- 3 = Laser damaged

Field 21 Sensor data is wrong in the data field! Please use date provided by the file name!

8. File Names

2017_07.txt	2017_17.txt	2017_27.txt	2017_37.txt	2017_47.txt	2017_57.txt	2017_67.txt
2017_08.txt	2017_18.txt	2017_28.txt	2017_38.txt	2017_48.txt	2017_58.txt	2017_68.txt
2017_09.txt	2017_19.txt	2017_29.txt	2017_39.txt	2017_49.txt	2017_59.txt	2017_69.txt
2017_10.txt	2017_20.txt	2017_30.txt	2017_40.txt	2017_50.txt	2017_60.txt	2017_70.txt
2017_11.txt	2017_21.txt	2017_31.txt	2017_41.txt	2017_51.txt	2017_61.txt	2017_71.txt
2017_12.txt	2017_22.txt	2017_32.txt	2017_42.txt	2017_52.txt	2017_62.txt	2017_72.txt
2017_13.txt	2017_23.txt	2017_33.txt	2017_43.txt	2017_53.txt	2017_63.txt	2017_73.txt
2017_14.txt	2017_24.txt	2017_34.txt	2017_44.txt	2017_54.txt	2017_64.txt	2017_74.txt
2017_15.txt	2017_25.txt	2017_35.txt	2017_45.txt	2017_55.txt	2017_65.txt	2017_75.txt
2017_16.txt	2017_26.txt	2017_36.txt	2017_46.txt	2017_56.txt	2017_66.txt	2017_76.txt

2017_77.txt
2017_78.txt

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

10. **Digital Object Identifier (DOI)** – See the online dataset description for the DOI.

11. **GCMD Keywords** - See the online dataset description for the GCMD science keywords.

12. **Publications** –

Aikins, J., K. Friedrich, B. Geerts, and B. Pokharel, 2016: [Role of a Low-Level Jet and Turbulence on Winter Orographic Snowfall](#). *Mon. Wea. Rev.*, **144**.

Friedrich, K., E. A. Kalina, J. Aikins, J. Sun, D. Gochis, P. Kucera, K. Ikeda, and M. Steiner, 2016: [Raindrop size distribution and rain characteristics during the 2013 Great Colorado Flood](#). *J. Hydromet.*, **17**, 53-72.

Friedrich, K., S. Higgins, F. J. Masters and C. R. Lopez, 2013: [Articulating and stationary PARSIVEL disdrometer in severe weather](#). *J. Atmos. Ocean Technol.*, **30**, 2063-2080.