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

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

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

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3. **Time of Interest –**

2017/01/08 01:29:10 to 2017/01/08 23:59:50
2017/01/09 00:00:00 to 2017/01/09 07:00:30
2017/01/11 01:07:30 to 2017/01/11 21:25:00
2017/01/18 00:12:00 to 2017/01/19 23:59:50
2017/01/19 00:00:00 to 2017/01/19 23:59:50
2017/01/20 00:00:00 to 2017/01/20 16:39:40
2017/01/21 18:47:00 to 2017/01/21 23:59:50
2017/01/22 00:00:00 to 2017/01/22 23:59:50
2017/01/23 00:00:00 to 2017/01/23 15:58:40
2017/01/31 00:59:00 to 2017/01/31 23:59:50
2017/02/03 00:00:00 to 2017/02/03 23:59:50
2017/02/04 00:00:00 to 2017/02/04 21:03:10
2017/02/05 00:36:00 to 2017/02/05 17:22:10
2017/02/07 17:56:00 to 2017/02/07 23:59:50
2017/02/16 00:58:20 to 2017/02/16 22:13:40
2017/02/17 00:00:00 to 2017/02/17 18:02:50
2017/02/18 20:01:50 to 2017/02/18 23:59:50
2017/02/19 00:00:00 to 2017/02/19 23:59:50
2017/02/20 00:00:00 to 2017/02/20 23:59:50
2017/02/21 00:00:00 to 2017/02/21 23:59:50
2017/02/22 18:11:00 to 2017/02/18 16:33:40
2017/03/04 00:00:00 to 2017/03/04 23:59:50
2017/03/05 00:00:00 to 2017/03/05 17:03:00
2017/03/07 00:00:00 to 2017/03/07 23:59:50
2017/03/09 00:00:00 to 2017/03/09 23:59:50

no data available for IOP24 (16 Mar)

4. **Area of Interest** –

Packer John Site: 44.207637; -116.069203 @ 2138 m MSL
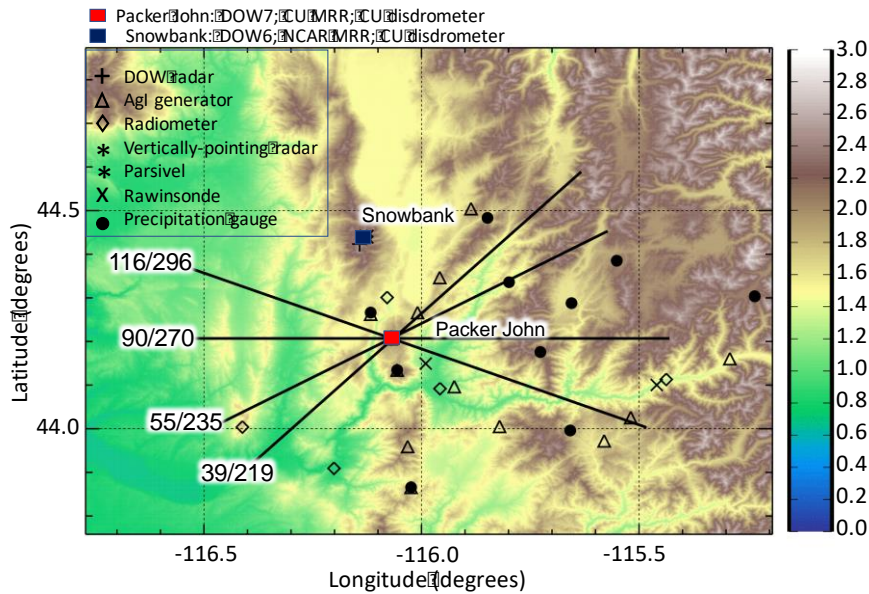
Left panel: View to the west (Packer John radar in the background); right panel: view to the east

5. **Data Frequency -** Frequency of data collection continuously during IOPs; data sampled every 10 seconds.
6. **Data Spatial Type** - readable ASCII text

No.	Description	Digits	Form	Range	Unit
01	Rain intensity (32 bit [1])	8	0000.000	0.000 ... 9999.999	mm/h
02	Rain amount accumulated (32 bit [1])	7	0000.00	0.00 ... 0300.00	mm
03	Weather code acc. to SYNOP $w_a w_a$; 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 [1])	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 [1])	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 [1]) max. 30.000 mm/h	6	00.000	0.000 ... 30.000	mm/h
31	Rain intensity (16 bit [1]) max. 1200.0 mm/h	6	0000.0	0.0 ... 1200.0	mm/h
32	Rain amount accmulated (16 bit [1])	7	0000.00	0.00 ... 0300.00	mm
33	Radar reflectivity (16 bit [1])	5	00.00	−9.99 ... 99.99	dBz
34	Kinetic energy	7	000.000	0.000 ... 999.999	J/(m²h)
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)	223	00.000S	−9.999 ... 99.999	$\log_{10}$ (1/m³ mm)
	1. Value = average volume equivalent diameter (ved) of the 1. class				
91	Field v (d)	223	00.000S	0.000 ... 99.999	m/s
	1. Value = average particle speed (ps) of the 1. class				
93	Raw data (volume equivalent diameter)	4095	000S	0 ... 999	1
	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 = ...				

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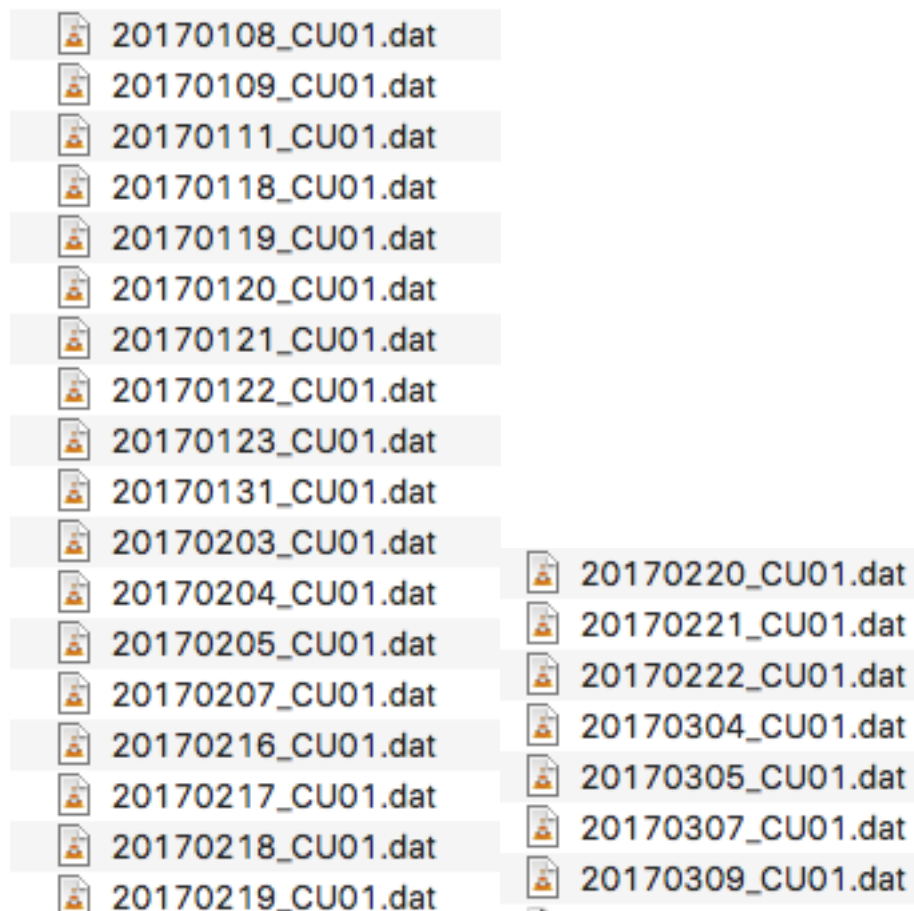
Classification according to diameter and velocity is described in Pages 44-45 in http://www.ott.com/en-us/products/download/operating-instructions-present-weather-sensor-ott-parsivel2/

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

8. **File Names**

20170108_CU01.dat
20170109_CU01.dat
20170111_CU01.dat
20170118_CU01.dat
20170119_CU01.dat
20170120_CU01.dat
20170121_CU01.dat
20170122_CU01.dat
20170123_CU01.dat
20170131_CU01.dat
20170203_CU01.dat
20170204_CU01.dat
20170205_CU01.dat
20170207_CU01.dat
20170216_CU01.dat
20170217_CU01.dat
20170218_CU01.dat
20170219_CU01.dat

20170220_CU01.dat
20170221_CU01.dat
20170222_CU01.dat
20170304_CU01.dat
20170305_CU01.dat
20170307_CU01.dat
20170309_CU01.dat

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