Station 38 Radiosonde Launch Site Data Readme File (or SJSU radiosonde launch site)

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1.0 Data Set Description

This dataset is the preliminary data for radiosondes launched at Santa Barbara Fire Station 38 during the Sundowner Winds Experiment (SWEX) 2022.

Version 1. April 16, 2023

Temporal Period: April 4, 2022 17:02 UTC to May 11, 2022 14:10 UTC

Radiosonde launch site: -120.21407 W, 34.47646 N

Data Frequency:

IOP	Launch Times	IOP	Launch Times
IOP1 1700 UTC 04 April to 1400 UTC 05 April 8 launches	1702 UTC 04 April 1958 UTC 04 April 2259 UTC 04 April 0159 UTC 05 April 0504 UTC 05 April 0759 UTC 05 April 1105 UTC 05 April 1401 UTC 05 April	IOP8 1700 UTC 08 May to 1400 UTC 09 May 10 launches	1700 UTC 08 May 2000 UTC 08 May 2300 UTC 08 May 0030 UTC 09 May 0200 UTC 09 May 0330 UTC 09 May 0500 UTC 09 May 0800 UTC 09 May 1100 UTC 09 May 1410 UTC 09 May
IOP2 2300 UTC 05 April to 0800 UTC 06 April 4 launches	2305 UTC 05 April 0159 UTC 06 April 0459 UTC 06 April 0759 UTC 06 April	IOP9 1700 UTC 10 May to 1400 UTC 11 May 9 launches	1659 UTC 10 May 2000 UTC 10 May 2300 UTC 10 May 0159 UTC 11 May 0330 UTC 11May 0500 UTC 11 May 0800 UTC 11 May 1100 UTC 11 May 1410 UTC 11 May
IOP3 1700 UTC 13 April to 1400 UTC 14 April	1658 UTC 13 April 2000 UTC 13 April 2259 UTC 13 April 0200 UTC 14 April	IOP10 0 launches	N/A Station 38 did not launch during IOP10

8 launches	0500 UTC 14 April 0759 UTC 14 April 1105 UTC 14 April 1403 UTC 14 April		
IOP4 1700 UTC 18 April to 1400 UTC 19 April 8 launches	1700 UTC 18 April 2000 UTC 18 April 2259 UTC 18 April 0200 UTC 19 April 0510 UTC 19 April 0807 UTC 19 April 1104 UTC 19 April 1359 UTC 19 April	EOP1 1700 UTC 17 April to 1500 UTC 18 April	1659 UTC 17 April 2000 UTC 17 April 2259 UTC 17 April 0200 UTC 18 April 0500 UTC 18 April 0802 UTC 18 April 1100 UTC 18 April 1400 UTC 18 April
IOP5 1700 UTC 23 April to 1400 UTC 24 April 8 launches	1659 UTC 23 April 2001 UTC 23 April 2300 UTC 23 April 0159 UTC 24 April 0505 UTC 24 April 0800 UTC 24 April 1100 UTC 24 April 1400 UTC 24 April	EOP2 1700 UTC 23 April to 1400 UTC 24 April	1700 UTC 23 April 2000 UTC 23 April 2300 UTC 23 April 0200 UTC 24 April 0501 UTC 24 April 0800 UTC 24 April 1100 UTC 24 April 1400 UTC 24 April
IOP6 1700 UTC 28 April to 0500 UTC 29 April 7 launches	1700 UTC 28 April 2000 UTC 28 April 2300 UTC 28 April 0030 UTC 29 April 0200 UTC 29 April 0330 UTC 29 April 0500 UTC 29 April	EOP3 1700 UTC 04 May to 1400 UTC 05 May	1700 UTC 04 May 1830 UTC 04 May 2000 UTC 04 May 2300 UTC 04 May 0200 UTC 05 May 0330 UTC 05 May 0500 UTC 05 May 0800 UTC 05 May 1100 UTC 05 May 1400 UTC 05 May
IOP7 2300 UTC 07 May to 0330 UTC 08 May 3 launches	2300 UTC 07 May 0200 UTC 08 May 0330 UTC 08 May		

Data source: GRAW GS-E radiosonde system with DFM-09 radiosondes

Data set restrictions: N/A

2.0 Instrument Description

Conventional radiosonde system (GRAW GS-E) with outputs of pressure, temperature, relative humidity, dewpoint, wind speed, wind direction, and geopotential height.

3.0 Data Collection and Processing

Description of data collection:

Data was collected in support of intensive (or extensive) operational periods during SWEX.

4.0 Data Format

Data file naming conventions:

SWEX_SBFS38_DFM09_bufr030952_YYYYMMDD_HHMMSS_.csv

Data format and layout:

,Ta	ble Time-	based BUF	(03090	52) at	End			
		BUFR D	ata			,		
TIME	PRES.	HGT/MSL	TEMP.	RH	DEWP	W.D	W.S	8042 ,
Sec	mb	Meter	°C	%	°C	Deg.	Knots	Code Table,
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0	1005	60	18	29	-0.3	295	6.7	145408,
1	1004.4	64	18	29	-0.1	298	6.9	0,
2	1003.8	69	18.1	29	0	301	7.1	0,

Variable	Unit	Intervals	Resolution
Temperature	°C	1 s	0.1°C
Relative Humidity	%	1 s	1.0%
Dewpoint	°C	1 s	0.1°C
Pressure	hPa	1 s	0.1 hPa
Wind Speed	ms^{-1}	1 s	0.1 ms^{-1}
Wind Direction	°	1 s	1.0°
Geopotential Height	m	1 s	1.0 m

5.0 Data Remarks

Missing data periods:

IOP6- 1100 UTC launch

IOP10- all soundings

Note: The files that say “SBFS18” are meant to say “SBFS38”. SBFS18 and SBFS38 are synonymous with each other.

Programming language compatible to manipulate data:

Python

Data for each IOP:

Look at Data Frequency in **1.0 Data Set Description**.

6.0 References

Clements, Craig B., and Andrew J. Oliphant., 2014: The California State University Mobile Atmospheric Profiling System: A facility for research and education in boundary layer meteorology. *Bull. Amer. Meteor. Soc*. **95.11**. 1713-1724. https://doi.org/10.1175/BAMS-D-13-00179.1

7.0 Appendix

Key Words: SWEX, sundowner, radiosonde, sounding, upper air.