

Readme File for SUNY Oswego Mobile Surface Snow Data in LEE Project

Title: LEE Oswego Mobile Surface Snow Observation Data

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1.0 Data Set Description: SUNY Oswego positioned 1-3 snow teams in all events observed during the Lake-Effect Electrification (LEE) project during November 2022 through March 2023. Student teams positioned with the EFM (electric field meter) sonde and the DOW (Doppler on Wheels) facilities (not associated with these facilities in March) recorded precipitation type (e.g., snow, graupel), liquid equivalent precipitation, snow fall, snow depth on the ground, photographs of the precipitation particles, and notes at variable time intervals (e.g., recorded when precipitation type changed, hourly snowfall). Please see the LEE Field Catalog's Reports section (<http://catalog.eol.ucar.edu/lee/344063/files>) for more details. Below is a list of events we sampled with locations (UTC date; latitude, longitude, and elevation not available for most events):

20221113: Williamstown and Fulton, NY
20221118: Watertown and Henderson Harbor, NY
20221120: Oswego and Williamstown, NY
20221218: Adams, NY
20221219: Williamstown and Bayshore Grove, NY
20230124: Williamstown, Oswego and Mexico, NY
20230127: Fulton, and Hannibal and Fair Haven, NY
20230128: Smartville, Pulaski, NY and (43.612, -76.183)
20230131: Fulton, NY

20230201: Smartville, Hendersonville and Port Ontario, NY and (43.799, -75.731)
20230202: (43.799, -75.731) and Oswego County Fairgrounds, NY
20230319: (43.790, -75.520) and (43.784, -75.490) and (43.794, -75.548)

Data version number and date: 1.0, 20230412

Data status: Final

Data frequency: variable

2.0 Instrument Description: For snowfall measurements (e.g., hourly and 6-hourly) a standard white-painted piece of plywood and ruler (resolution 0.1") were used via National Weather Service standards

(https://www.youtube.com/watch?v=CzWFhbO_NNg). The snow depth was measured on the ground. For liquid equivalent (resolution 0.01") we used a Snowmetrics device and their instructions (<http://snowmetrics.com/wp-content/uploads/2014/10/how-to-snow-board.pdf>, document also attached). Lastly, for precipitation particle photographs most students used a smartphone camera and a black felt cloth with squares stitched on it for size approximations. The length of a side of each of these squares on the cloth is 1.75".

3.0 Data Collection and Processing: Snow boards were set up several meters away from any obstacle.

4.0 Data Format: Microsoft Excel spreadsheets. The file names are formatted as YYYYMMDDHHHHutc_DOW/Sonde_location.xlsx. The HHHH is the start time of the observations to the nearest minute. Names of observers and locations are toward the top of the sheet or in the first few columns. Column headings are generally as follows: time (UTC), precipitation type (dominant), liquid equivalent precipitation amount (nearest 0.01"), snow fall (nearest 0.1"), snow depth (nearest inch/0.1"), notes. Photographs of precipitation particles may be embedded in the timeline or inserted in their own cells with a time stamp.

5.0 Data Remarks: Please read reports for each surface snow site on this website: <http://catalog.eol.ucar.edu/lee/344063/files>.

6.0 References

7.0 Appendix: GCMD science keywords: Hydrometeors, Liquid Water Equivalent, 3 and 6 Hour Precipitation Amount, Hourly Precipitation Amount, Frozen Precipitation, Surface Precipitation, Snow Water Equivalent, Snow Pellets, Lake Effect Snow