Title: LEE Oswego Sounding Data

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1.0 **Data Set Description:** SUNY Oswego launched 28 soundings (2 failed due to broken instrument/operator error) from the north deck of the Shineman Science Center on the SUNY Oswego campus (43.46N, 76.54W, 107m MSL) for the Lake-Effect Electrification (LEE) project during September 2022 through March 2023. Most (25/28) sondes were of the iMet-3050A type while 3 of the sondes were Vaisala RS41 sondes. Please see the LEE Field Catalog's Reports section Oswego Sounding Mission Summaries (http://catalog.eol.ucar.edu/lee/344061/files) for more details of each launch. We launched 3 sondes in support of Project IMPACTS (Investigation of Microphysics and Precipitation for Atlantic Coast-Threatening Snowstorms).

Data version number and date: 1.0, 20230401
Data status: Final

Data frequency: 5s (sharppy files, except 1s for March sondes) - 10s (DigiCora files) iMet sondes, 1s Vaisala sondes

Here is a list of successful launch dates (YYYYMMDD format) and times (* KML files for 3D sonde locations available, ** Vaisala sonde, # IMPACTS sonde, $ elevated convection event with lightning):

20220901-0159Z, 20220927-0903Z, 20220927-1326Z, 20220928-0148Z, 20221113-1224Z**, 20221117-0916Z*, 20221117-1533Z*, 20221118-2357Z**, 20221201-0516Z*, 20221218-0406Z*, 20221218-1258Z*, 20221219-1235Z*, 20221219-1648Z*, 20221227-1202Z*, 20230113-0504Z*#, 20230119-2326Z*#, 20230124-2012Z*, 20230126-0011Z*$, 20230127-0617Z*, 20230128-1641Z*, 20230129-1424Z*#, 20230201-1744Z*, 20230201-2355Z*, 20230203-0156Z*, 20230319-0707Z*, 20230319-1021Z

Failed launches: 20221113-1200Z**, 20230124-2000Z

2.0 **Instrument Description:** iMet-4 (iMetOS-II software) and Vaisala, Inc. RS41-SGP sondes (MW41 software, Ground Check Set RI41).

Please see attached iMet-4 Technical Data Sheet, iMet Operations and Maintenance Manual and Software Reference Manual for details.

Please see the RS41 brochure attached for Vaisala, Inc. RS41 technical specifications.

3.0 **Data Collection and Processing:** Data were collected by launching from a rooftop platform three stories above ground.

4.0 **Data Format:** Two (2) files per each iMet sonde launch are included: sharppy (filename extension OSWYYYYMMDD_HHZ_sharppy.txt) and DigiCora (OSWYYYYMMDD_HHZ_DigiCora.txt), where HH is approximate time. The sharppy files are CSV format with the following column headings after the header (OSW is location – Oswego, NY, followed by the date and exact time – YYMMDD/HHHH UTC): Level (hPa), Height (m MSL), Temperature (°C), Dewpoint Temperature (°C), Wind Direction (degrees from true North), and Wind Speed (knots). The DigiCora files are column delimited format with the following column headings after the header (latitude, longitude, station height – m MSL, year – YY, month, day, hour, minute, place-date and time of filename): Time after launch (s), Height (m MSL), Pressure (hPa), Temperature (°C), Relative Humidity (%), Dewpoint Temperature (°C), Wind Direction (degrees from true North), Wind Speed (m/s). Some iMet launches have a KML file also.

The Vaisala sonde launch filenames have the following format:
edt_YYYYMMDD_HHHH.txt (UTC time). These files are column delimited format with the following column headings (no header): Time (s), Height (m MSL), Pressure (hPa), Temperature (°C), Relative Humidity (%), Wind Direction (degrees from true

North), Wind Speed (m/s), range (m), latitude (decimal degrees) and longitude (decimal degrees).

5.0 **Data Remarks:** Please read field catalog reports for each sounding launched on this website: http://catalog.eol.ucar.edu/lee/344061/files. There were some humidity measurement issues noted with the iMet system (e.g., see 20230128_17Z field catalog report).

TTAA/BB format files are also available upon request for some of the launches (the ones indicated to have KML files also in Section 1.0 above).

6.0 **References**

7.0 **Appendix:** GCMD science keywords: Atmospheric Pressure, Atmospheric Temperature, Atmospheric Water Vapor, Atmospheric Winds