Mesowest sensors

STATUS: "ACTIVE", MNET_ID: "34", PERIOD_OF_RECORD: {

NAME: "Olympus Hills - MSI'

wind_gust_set_1:
2.97,

SENSOR_VARIABLES: {...},

start: "2000-10-24T00:00:00Z' end: "2017-03-27T21:55:00Z"

"2017-03-27T21:15:00Z", "2017-03-27T21:20:00Z",

"2017-03-27T21:25:00Z",
"2017-03-27T21:30:00Z",

"2017-03-27T21:35:00Z" "2017-03-27**T**21:40:00Z" "2017-03-27T21:45:00Z" "2017-03-27T21:50:00Z"

"2017-03-27T21:55:00Z"

"2017-03-27**T**22:00:00**Z**"

"2017-03-27**T**22:05:00**Z**"

~202 sensors have PM2.5 measurements, but we think many of these are duplicates of PurpleAir sensors

> Lots of query settings available! Documentation: https://synopticlabs.org/api/mesonet/

Other sensors may have other measurements; this will get a list of all Mesowest sensors and what measurements they have available: https://api.mesowest.net/v2/stations/metadata?&token=demotoken&sensorvars=1

> values that Mesowest doesn't supply: Sensor Model, Sensor Version, pm1, pm10.0

null measurements seem to be pretty common with these sensors; only store records that have non-null PM2.5 measurements

AirU Sensors

longitude

```
Sensor Registration
                                                                                    POSTed csv data... as one line or many
List of our pre-selected sensors
                                                                                                                                                                                                                                                    Primary feed for a single sensor
http://api.mesowest.net/v2/stations/timeseries
                                                                                                                                                                                                                                                    https://api.thingspeak.com/channels/198241/feed.json?results=100&api_key=48ZPHGK7WBPVLNQ2
   ?recent=10&token=demotoken
                                                                                                                                                                                                                                                       channel: {
   id: 198241,
   name: "AirMonitor_5c:cf:7f:cf:6b:e8",
   &stid=mtmet,wbb,NAA,MSI01,UFD10,UFD11
   &vars=wind_speed,air_temp,solar_radiation,wind_gust,
          relative_humidity,wind_direction,volt,pressure,
                                                                                                                                                                                                                                                           field1: "PM1.0 (ATM)",
field2: "PM2.5 (ATM)",
          precip_accum_fifteen_minute,precip_accum_five_minute,
          ozone_concentration,altimeter,PM_25_concentration,
          soil_temp,sensor_error_code,
          photosynthetically_active_radiation,
                                                                                                                                                                                                                                                           updated_at: "2017-03-27T19:58:15Z"
                                                                                           MongoDB
          clear_sky_solar_radiation,flow_rate,
                                                                                                                                                                                                                                                          last_entry_id: 242641
           internal_relative_humidity,air_flow_temperature,
           evapotranspiration
                                                                                                 Longitude -
                                                                                               → Altitude
                                                                                                                                                                                                    Purple Air sensors
                                                                                                  Sensor Model ←
                                                                                                  Sensor Version ←
                               precip_accum_five_minute_set_1:
                                                                                                → Start ←
                                                                                                                                                                                                           List of all sensors
                                                                                                                                                                                                           https://map.purpleair.org/json
                                                                                                                                                                                                                                                                                               Lots of query / averaging settings available! Documentation:
                                                                                                                                                                                                               THINGSPEAK PRIMARY ID: "198241"
                                                                                                                                                                                                                                                                                               https://www.mathworks.com/help/thingspeak/get-a-channel-feed.html
                                                       wind_speed_set_
                                                                                           InfluxDB
                                                                                                                                                                                                                                                                                               values that Purple Air doesn't supply:
                                                                                                                                                                                                                                                                                              Pressure*, Altitude
                                                                                                                                                                                                                                                                                               * (pressure IS in the all-sensor list, but AFAIK it's not
                                                                                                                                                                                                               DEVICE_BRIGHTNESS: "
                                                                                                                                                                                                                                                                                                  available in the time series feeds)
                                                                                                                                                                                                               temp_f: "52", humidity: "67",
                               altimeter_set_1d:
101243.67,
                                                                                               → Humidity (%) ←
                                                                                                                                                                                                               THINGSPEAK SECONDARY ID: "198242",
                                                                                                                                                                                                               THINGSPEAK SECONDARY ID READ KEY: "80J27474V6WYU5NC
                                                                                               → Pressure (Pa)
                                                                                                pm1 (ug/m<sup>3</sup>) ←
                                                                                                  pm2.5 (ug/m^3) \leftarrow
                                                                                                                                                                                                               "{"v":0.33,"v1":0.7649148515564815,"v2":1.423589445142715,
                                                                                                  pm10.0 (ug/m^3) \leftarrow
                                                                                                                                                                                                               67664101363, "v6":2.8938586977010923, "pm":0.33, "lastModified
                                                                                                                                                                                                                :1490640835773, "timeSinceModified":69195}"
                               wind_direction_set_1
                                                    TIMEZONE: "America/Denver
                                                                                                                                                                                                                                                    Secondary feed for a single sensor
                                                                                                                                                                                                                                                   https://api.thingspeak.com/channels/198242/feed.json?results=100&api_key=80J27474V6WYU5NC
                                                                                 Latitude and Longitude are defined, and within
                               PM_25_concentration_set_1
                                                                                   Utah (Latitude [36.999090, 41.993882]; Longitude[-114.041498, -109.045215])
                                                                                                                                                                                                                                                           updated_at: "2017-03-27T20:00:45Z"
                                                                                                         sensors
                                                                                                                                                                                                                                                           last_entry_id: 243044
                                                                                                                                                                                                                                                          ____ created at: "2017-03-27T18:02:45Z"
                                                                                                                                                                                                                                                             entry_id: 242945,
                                                                                                List of all sensors, hourly measurements for the last 10 days
                                                                                                                                                                                                                                                             field1: "341.90"
                                                                                                                                                                                                                                                              field2: "93.35",
                                                                                                http://air.utah.gov/xmlFeed.php
                                                                                                                                                                                                                                                              field3: "11.32",
                                                                                                                                                                                                                                                              field4: "1.55"
                                                                                                                                                                                                                                                              field5: "0.58"
                                                                                                    <name>Salt Lake County</name>
                                                                                                                                                                                                                                                              field6: "0.06"
                                                                                                                                                                                                                                                             - field7: "1.00",
                                                                                                    ----- <date>03/27/2017 12:00:00</date>
                                                                                                                                                                                                                                                             field8: "2.00"
                                                                                                        <ozone>0.034</ozone>
                                                                                                        <ozone 8hr avg>0.031</ozone 8hr avg>
                                                                                                    ~pm25>2.3</pm25>
                                                                                                        <pm25_24hr_avg>2.5</pm25_24hr_avg>
                                                                                                        <nox>0.018</nox>
                                                                                                        <no2>0.013</no2>
                                                                                                                                              values that DAQ doesn't supply:
                                                                                                      — <temperature>41.99</temperature>
                                                                                                      -- <relative humidity>83</relative humidity>
                                                                                                                                               Sensor Model, Sensor Version, Start,
                                                                                                        <wind_speed>4.4</wind_speed>
                                                                                                        <wind direction>127</wind direction>
                                                                                                                                              Pressure, pm1
                                                                                                        <solar radiation>112</solar radiation>
                                                                                                        <noy>15.272</noy>
                                                                                                        <bp/>
                                                                                                     ---- <pm10>1.6</pm10>
                                                                                                 for each sensor, look up / hard code:
                                                                                                 latitude
```