

# AmeriFlux Meeting notes for 2021-11-09



compare\_bool\_result

Date

**\$currentDateLozenge**

## Attendees

Yong Wook Kim

Bethany Blakely

Katie Bowman

Rob Kooper

Minu Mathew

## Agenda

1. Automation of GHG file from the server
  - reading multiple datalogger files from the server and unifying them into one raw met file that includes the entire timeline of interest
  - ghg files, meteorological tower file (.dat)
  - ghg file: daily.
    - downloaded it based on the daily bases
    - time zone?
  - met tower file: grabbing the certain time certain time of the day
    - the new line will be added every 30 min
    - one file until the changes in variable that is recorded.
2. PyFluxPro demo
3. PyFluxPro data formatting - should the timestamps start with yyyy-mm-dd 00:00 and end with yyyy-mm-dd 23:00? It depends on the time period selected for eddypro run.
  - a. Not a requirement.
4. PyFluxPro installation queries. Done.
5. Differences in 2010 raw met data:
  - a. Field name : CPU:EBI\_Maize\_EC.CR3 -- is there a pattern?
  - b. Units : W/meter -- can we make a list of provided units? Or {column name:unit} mapping?
  - c. NAN and INF in file
  - d. Column names : SoilTempCA50\_Avg -- is this in soil key?
  - e. *Dont do this. No need to put 2010 data in pipeline.*
6. Findings in comparing the outputs of EddyPro :
  - a. Exactly the same
7. Finding in comparing the inputs to EddyPro:
  - a. Automated has 83 columns and manual has 38 columns.
  - b. There are 37 common columns. SHF\_1\_1\_2 is not present in the automated one, but present in manual.
    - i. Common cols :

```
['SWC_2_2_1', 'Ts_1_5_1', 'Ts_1_3_1',  
'Ts_2_1_1', 'SWC_1_2_1', 'PPFDr', 'RH', 'Ts_2_2_1', 'SWC_1_5_1', 'SWC_1_4_1', 'SWC_1_3_1', 'SWC_1_1_1',  
  
'Ts_1_4_1', 'Ta_1_1_2', 'Ts_1_1_1', 'SWC_2_1_1', 'LWout', 'Rr', 'SWC_2_5_1', 'Tc', 'Ts_1_2_1', 'WD', 'TI  
MESTAMP', 'SWin', 'SWC_2_3_1', 'SWC_2_4_1',  
'LWin', 'PPFD', 'SWout', 'Ts_2_5_1', 'Ta_1_1_1', 'Ts_2_3_1', 'SHF_1_1_1', 'Ts_2_4_1', 'P_rain', 'Rn', 'M  
WS']
```

- ii. Required cols are present (SWin, RH, LWin, PPFd). Locators (\_1\_1) are present.
  - iii. SHF\_1\_1\_2 is the only col that is not present in automated. Need to figure out why.
    - 1. SHF\_1\_1\_2 is a mistake from the manual entry. Should have been SHF\_2\_1\_1.
  - c. TIMESTAMP format in automated is with hyphen. TIMESTAMP format in manual is with /
  - d. Columns that are not-common to both dataframes :
    - 1. { 'Ah\_fromRH', 'CDMBattV\_Min', 'CDMPTempC\_Avg(1)', 'CDMPTempC\_Avg(2)', 'CDMPTempC\_Avg(3)', 'CDMPTempC\_Avg(4)', 'LWDn\_Avg', 'LWUp\_Avg',  
  
'MoistureA\_Avg', 'MoistureC\_Avg', 'PTemp\_Avg', 'RECORD', 'Rl\_net\_Avg', 'Rs\_net\_Avg', 'SBTempC\_Avg', 'SBTempK\_Avg', 'SHF\_1\_1\_2', 'SHF\_2\_1\_1',  
  
'SW\_out\_Avg', 'SoilT\_C\_Avg', 'SoilTempA\_Avg', 'SoilTempC\_Avg', 'TC\_100cm\_Avg', 'TC\_10cm\_Avg', 'TC\_20cm\_Avg', 'TC\_30cm\_Avg', 'TC\_40cm\_Avg', 'TC\_50cm\_Avg', 'TC\_5cm\_Avg',  
  
'TC\_60cm\_Avg', 'TC\_75cm\_Avg', 'TargTempC\_Avg', 'TargmV\_Avg', 'U\_Avg', 'VWC\_100cm\_Avg', 'VWC\_10cm\_Avg', 'VWC\_20cm\_Avg', 'VWC\_30cm\_Avg', 'VWC\_40cm\_Avg', 'VWC\_50cm\_Avg',  
  
'VWC\_5cm\_Avg', 'VWC\_60cm\_Avg', 'VWC\_75cm\_Avg', 'V\_Avg', 'batt\_volt\_Min', 'cnr4\_T\_C\_Avg', 'cnr4\_T\_K\_Avg' }
    - Ignore SHF\_1\_1\_2 and SHF\_2\_1\_1 - it is a mistake in the manual entry.
    - EddyPro ignores the extra columns (the "not common" columns).
    - Can delete the processed columns, TC\_100 SoilTC, SW\_out etc. Can delete everything in this list.
  - e. Comparing values of both inputs (common cols only) cell by cell.
  - i. False indicates difference in values. True indicates same value. The attached file (compare\_bool\_result) gives the count of False and True for each cell.
  - iii. P\_rain has False for 1467 times and True for 22 times -- need to check the values.
  - iv. Rr does not have any False values.
  - v. All SWC has 1488 False values and only 1 True value. -- because the manual variable naming convention is wrong. Can cross check this with Soil key EddyPro new moisture variables and EddyPro old moisture variables. Not critical.
  - vi. Same for Ts, False values are in 1480s and Trues are under 10. -- same prob as above
- Send Bethany the P\_rain values from automated file. And the manual one Precip\_IWS.

## Action items

- ☒ 16 Nov 2021 Send Bethany the P\_rain values from automated file. And the manual one Precip\_IWS. – Check for P\_rain
- ☐ 16 Nov 2021 Check for SWC and Ts naming convention with soil keys . Not critical.