Poll locked. Responses not accepted.

Where are you joining us from?

AMERIFLUX MANAGEMENT PROJECT Webinar Series, January 27, 2021

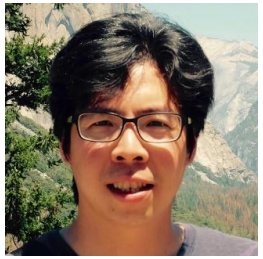
AMERIFLUX
MANAGEMENT PROJECT

Post-submission Data Life Cycle:

FP-In to BASE Publishing

Hosted by AmeriFlux Data Team

Danielle Svehla Christianson, Housen Chu
Deb Agarwal,You-Wei Cheah, Fianna O'Brien,
Gilberto Pastorello, Rachel Hollowgrass, Marty Humphrey



AmeriFlux Webinar Series, January 27, 2021

Webinar Goals

Who should attend:

- Site teams who have submitted or plan to submit flux/met data
- Data users who want to understand AmeriFlux data products & QA/QC

Presentation (~40 minutes):

- Data pipeline overview
- Preparation of flux/met data for submission
- QA/QC process and tests
- Data publication and beyond

Q&A: Polls within presentation and discussion at end (~20 minutes)

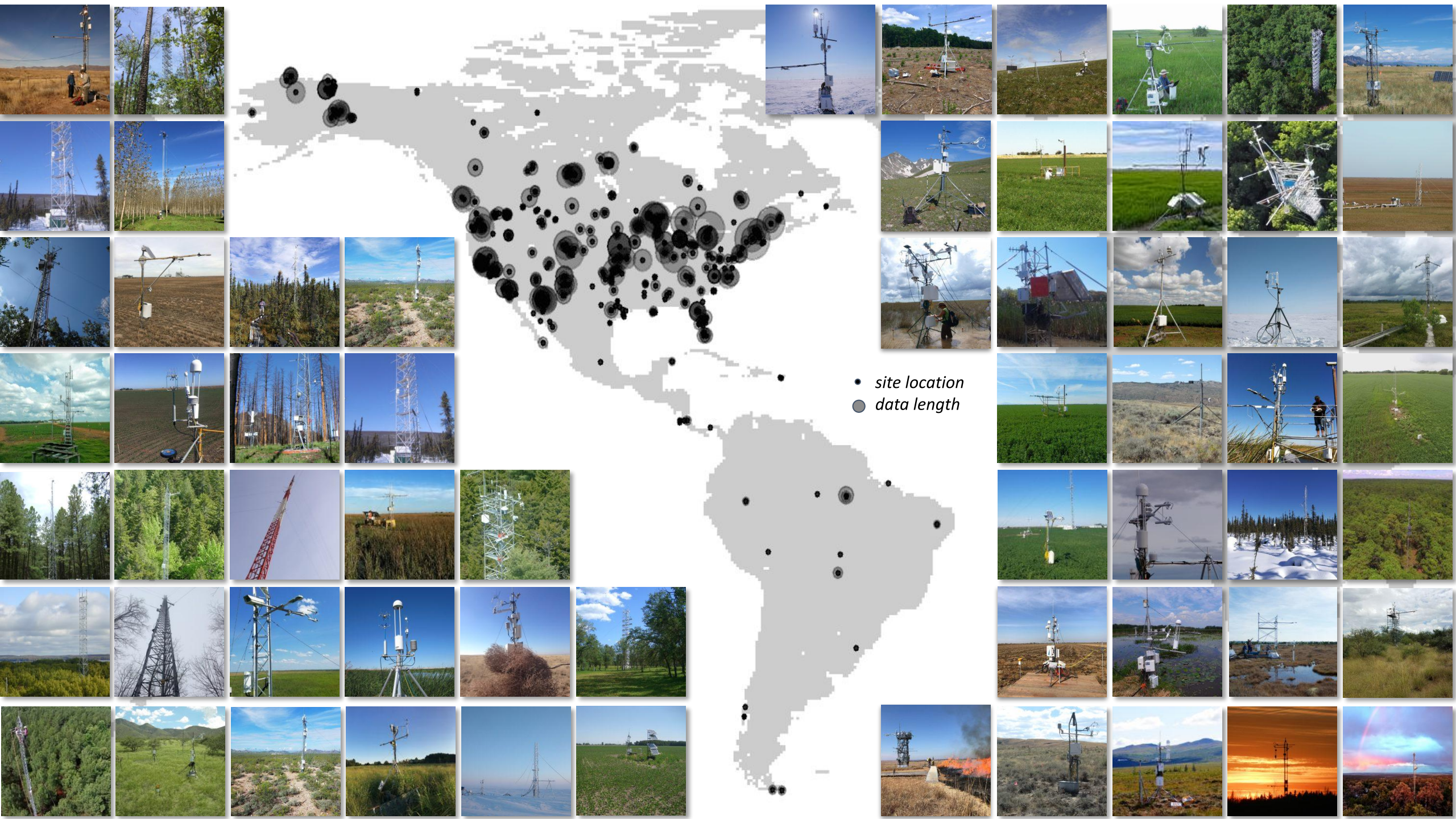
This webinar is recorded. Presentation & video will be made available on AmeriFlux website.

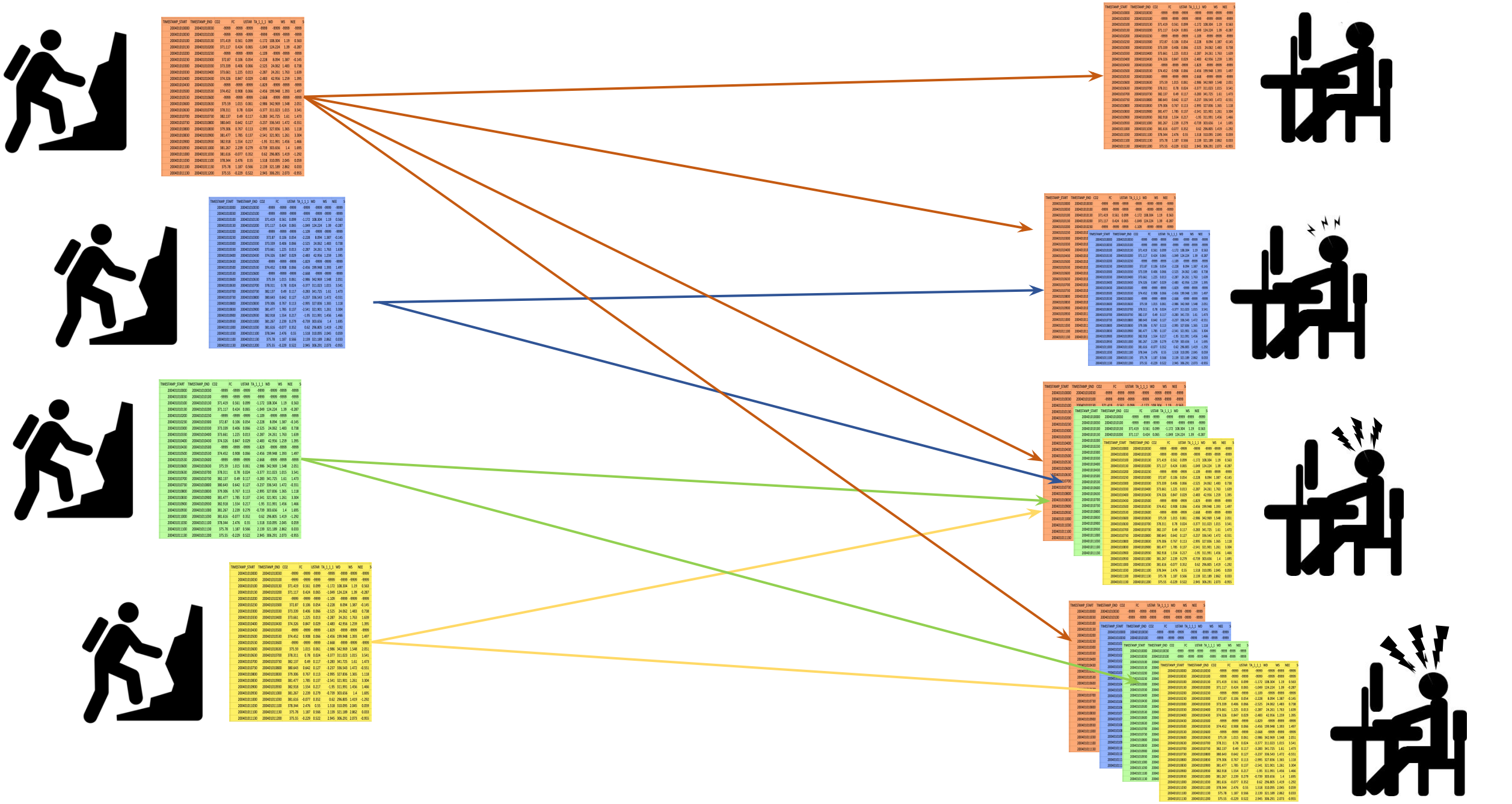
Add questions and comments in chat!

Mute during presentation.
Unmute for Q&A.

View chat window.
Send messages for questions, comments & zoom help.

Technical support in webinar
AMP-webinars@lbl.gov

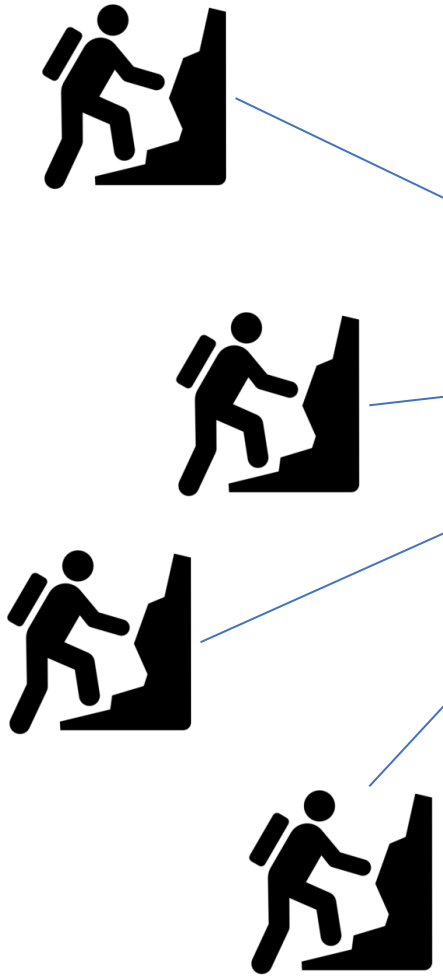

site location
data length



10^2+ Sites

10^3+ Users

AmeriFlux Flux/Met Data Pipeline



TIMESTAMP_START	TIMESTAMP_END	CO2	FC	USTAR	TA_1_1_1	WD	WS	NEE	S
200401010000	200401010030	-9999	-9999	-9999	-9999	-9999	-9999	-9999	
200401010030	200401010100	-9999	-9999	-9999	-9999	-9999	-9999	-9999	
200401010100	200401010130	371.419	0.561	0.099	-1.172	108.304	1.19	0.563	
200401010130	200401010200	371.117	0.424	0.065	-1.049	124.224	1.39	-0.287	
200401010200	200401010230	-9999	-9999	-9999	-1.109	-9999	-9999	-9999	
200401010230	200401010300	372.87	0.106	0.054	-2.228	8.094	1.387	-0.145	
200401010300	200401010330	373.339	0.406	0.066	-2.525	24.062	1.483	0.738	
200401010330	200401010400	373.661	1.225	0.013	-2.287	24.261	1.763	1.639	
200401010400	200401010430	374.326	0.847	0.029	-2.483	42.956	1.259	1.395	
200401010430	200401010500	-9999	-9999	-9999	-1.829	-9999	-9999	-9999	
200401010500	200401010530	374.452	0.908	0.066	-2.456	199.948	1.393	1.497	
200401010530	200401010600	-9999	-9999	-9999	-2.668	-9999	-9999	-9999	
200401010600	200401010630	375.59	1.015	0.061	-2.986	342.969	1.548	[illegible]	
200401010630	200401010700	378.311	0.78	0.024	-3.377	311.023	1.015	3.541	
200401010700	200401010730	382.137	0.49	0.117	-3.283	341.725	1.61	1.473	
200401010730	200401010800	380.643	0.642	0.127	-3.237	336.543	1.472	-0.551	
200401010800	200401010830	379.306	0.767	0.113	-2.995	327.836	1.365	1.118	
200401010830	200401010900	381.477	1.785	0.137	-2.541	321.901	1.261	3.304	
200401010900	200401010930	382.918	1.554	0.217	-1.95	311.991	1.456	1.466	
200401010930	200401011000	381.267	2.239	0.279	-0.739	303.656	1.4	1.695	
200401011000	200401011030	381.616	-0.077	0.352	0.62	296.805	1.419	-1.292	
200401011030	200401011100	378.344	2.476	0.55	1.518	310.095	2.045	0.059	
200401011100	200401011130	375.78	1.187	0.566	2.139	321.189	2.862	0.033	
200401011130	200401011200	375.55	-0.229	0.522	2.945	306.291	2.073	-0.955	

TIMESTAMP_START	TIMESTAMP_END	CO2	FC	USTAR	TA_1_1_1	WD	WS	NEE	S
200401010000	200401010030	-9999	-9999	-9999	-9999	-9999	-9999	-9999	
200401010030	200401010100	-9999	-9999	-9999	-9999	-9999	-9999	-9999	
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200401010300	200401010330	373.339	0.406	0.066	-2.525	24.062	1.483	0.738	
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200401010500	200401010530	374.452	0.908	0.066	-2.456	199.948	1.393	1.497	
200401010530	200401010600	-9999	-9999	-9999	-2.668	-9999	-9999	-9999	
200401010600	200401010630	375.59	1.015	0.061	-2.986	342.969	1.548	2.051	
200401010630	200401010700	378.311	0.78	0.024	-3.377	311.023	1.015	3.541	
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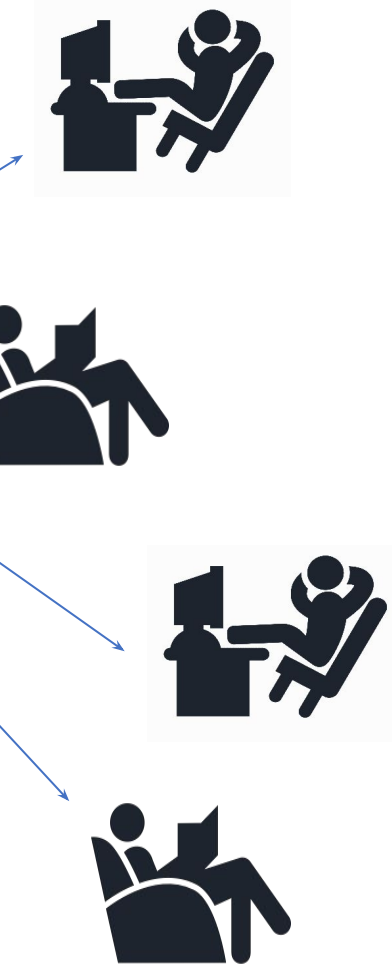
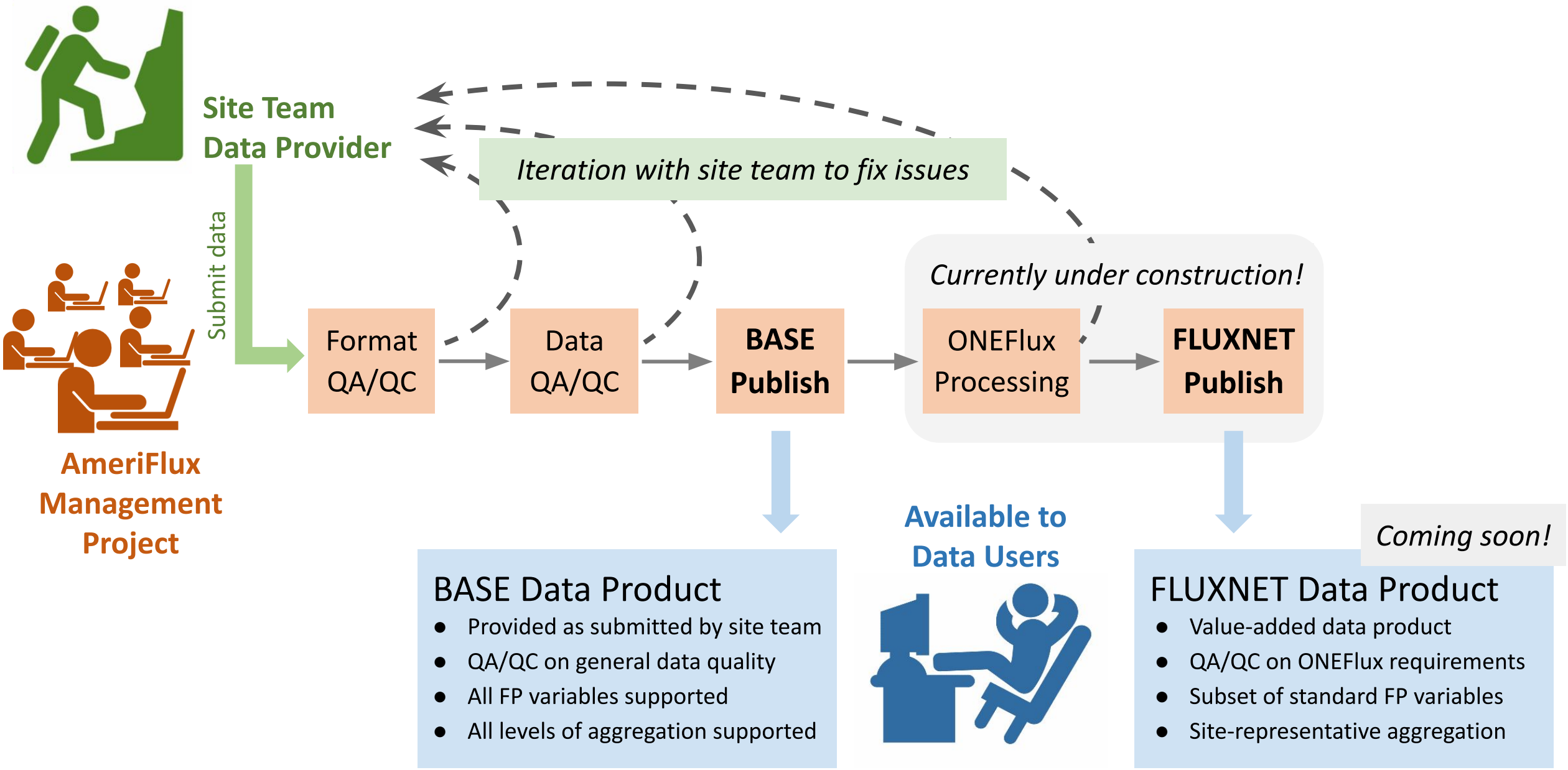
200401011130	200401011200	375.55	-0.229	0.522	2.945	306.291	2.073	-0.955	



Enable synthesis across sites and users

- Timely processing, traceability & minimal manual effort
- Adopt FP (Flux Processing) standard format
- Meet standard quality criteria
- Data version / citation / metadata

AmeriFlux Flux/Met Data Pipeline



AmeriFlux BASE QA/QC Pipeline

New online QA/QC Documentation available
https://ameriflux.lbl.gov/data/data-processing-pipelines/

Site Team
Data Provider

Submit data

Iteration with site team to fix issues

AmeriFlux Management Project

Format QA/QC → Data QA/QC → **BASE Publish** → *Currently under construction!* ONEFl Process

More details in Oct 19, 2020 Webinar
Requirements for processing using ONEFlux
https://ameriflux.lbl.gov/community/amp-webinar-series/

BASE Data Product

- Provided as submitted by site team
- QA/QC on general data quality
- All FP variables supported
- All levels of aggregation supported

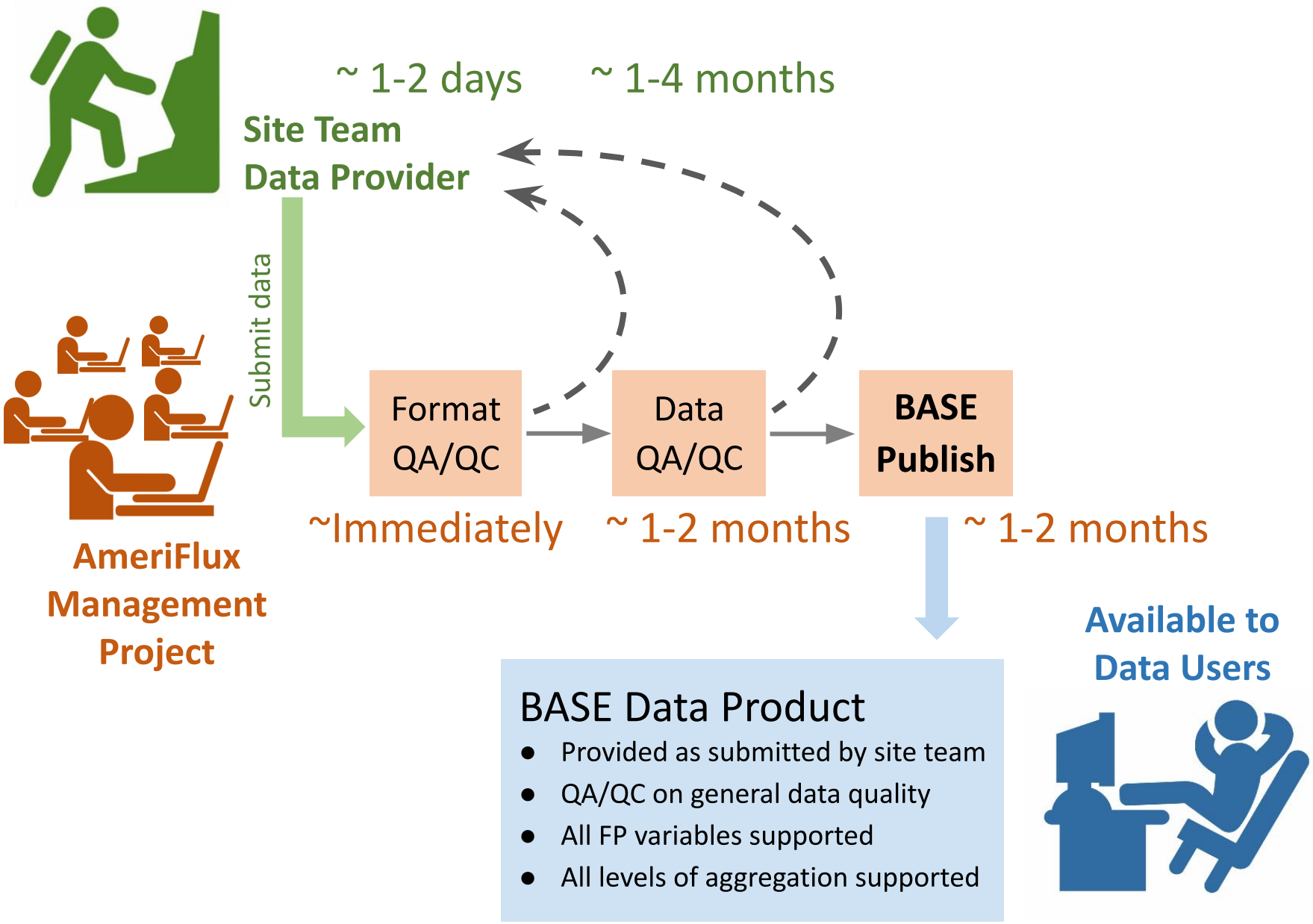
Available to Data Users

Coming soon!

FLUXNET Data Product

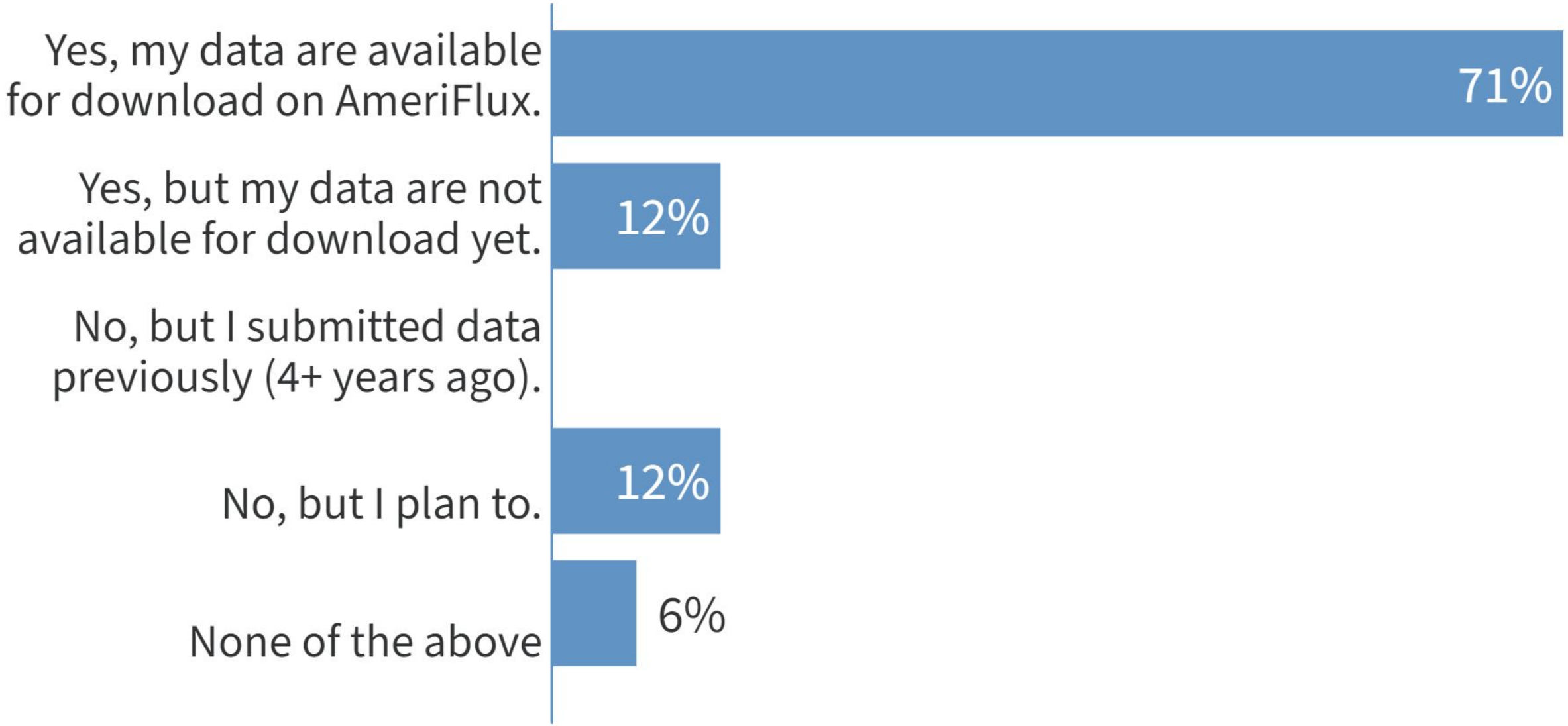
- Value-added data product
- QA/QC on ONEFlux requirements
- Subset of standard FP variables
- Site-representative aggregation

AmeriFlux BASE QA/QC Pipeline: **Processing schedules**



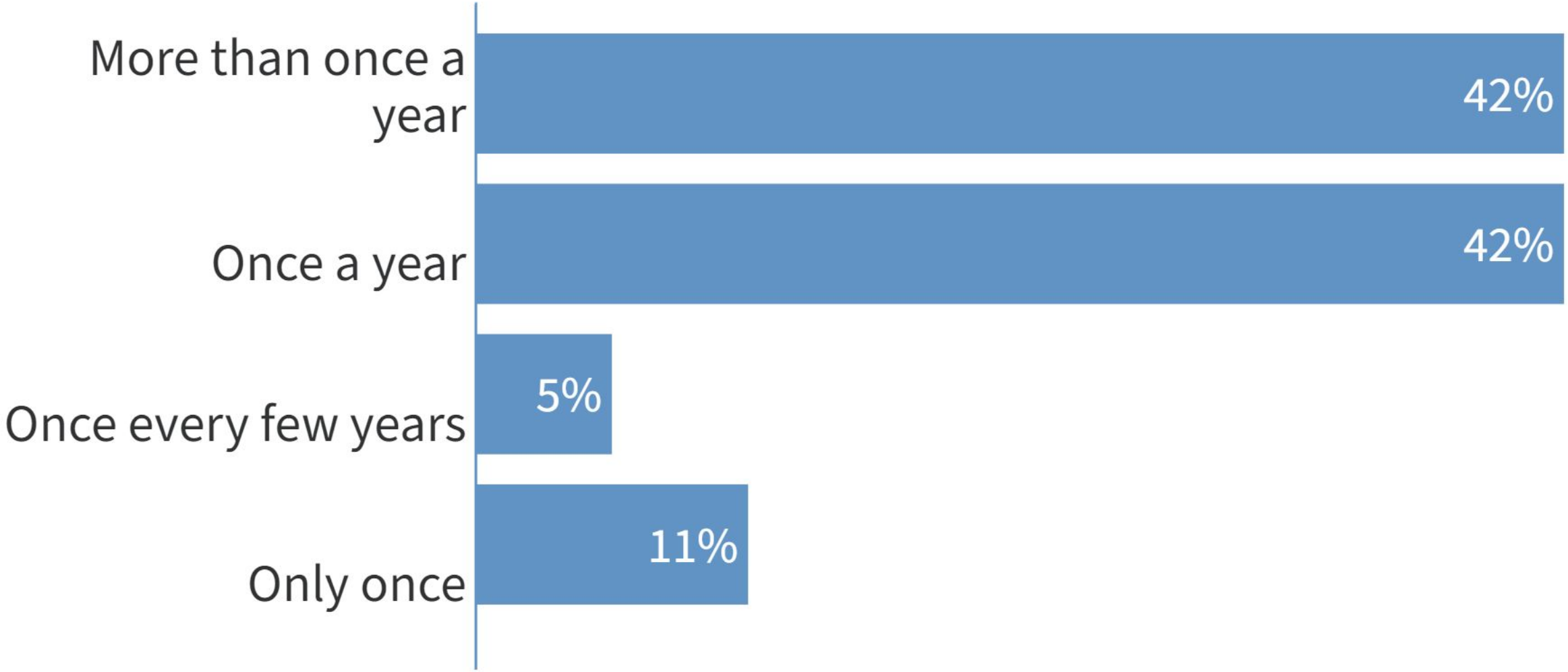
Poll locked. Responses not accepted.

Have you submitted flux/met data to AmeriFlux in last 4 years?



Poll locked. Responses not accepted.

If you have submitted or plan to submit flux/met data, how often do you submit data for a site?



Track your site's BASE Processing Status

https://ameriflux.lbl.gov/site/data-processing-status (site team membership required)

Data Processing Status

Use the table below to determine which sites have data that require action.

Key:
▼ = Site Team action required
✓ = Complete

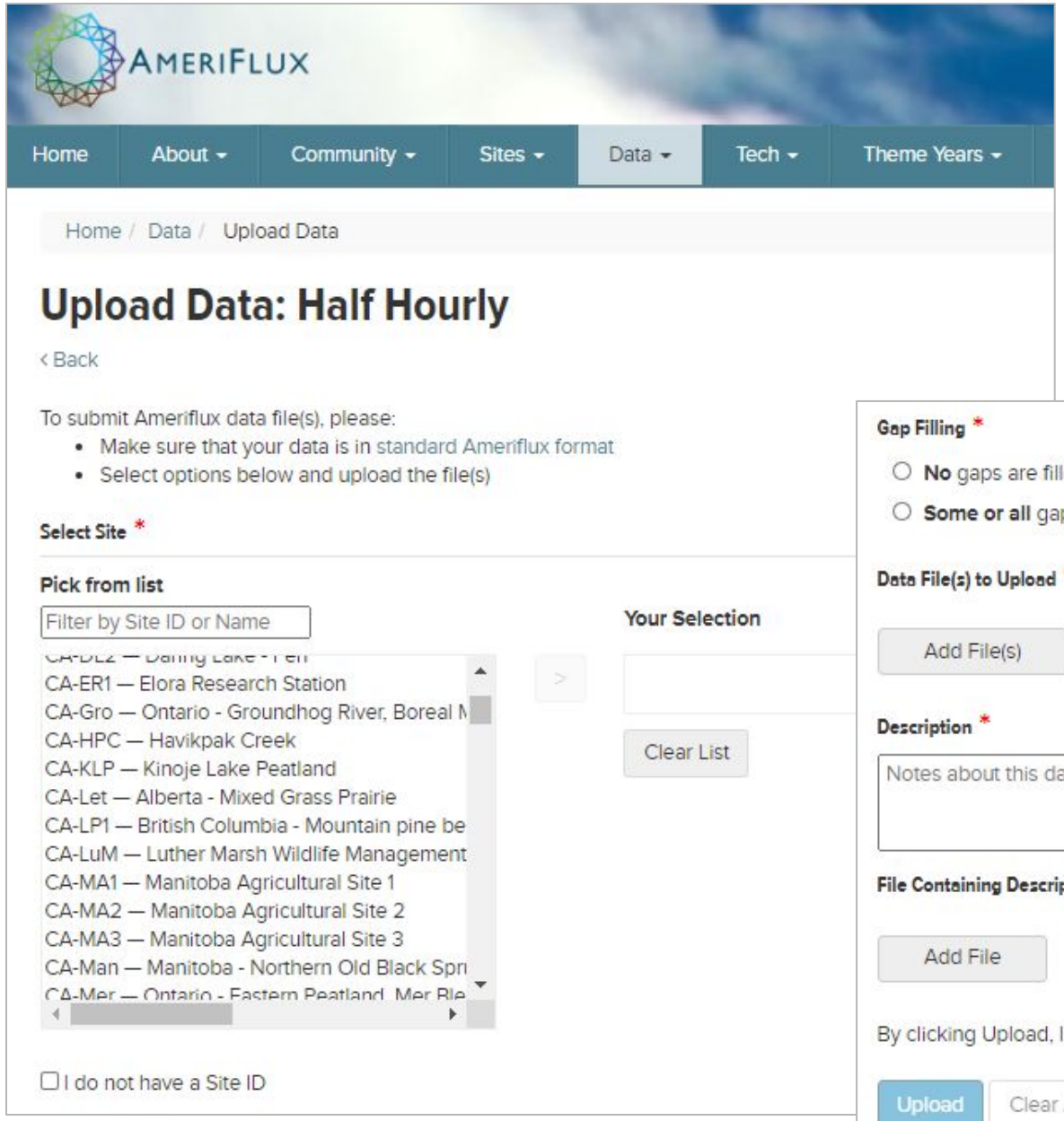
Statuses

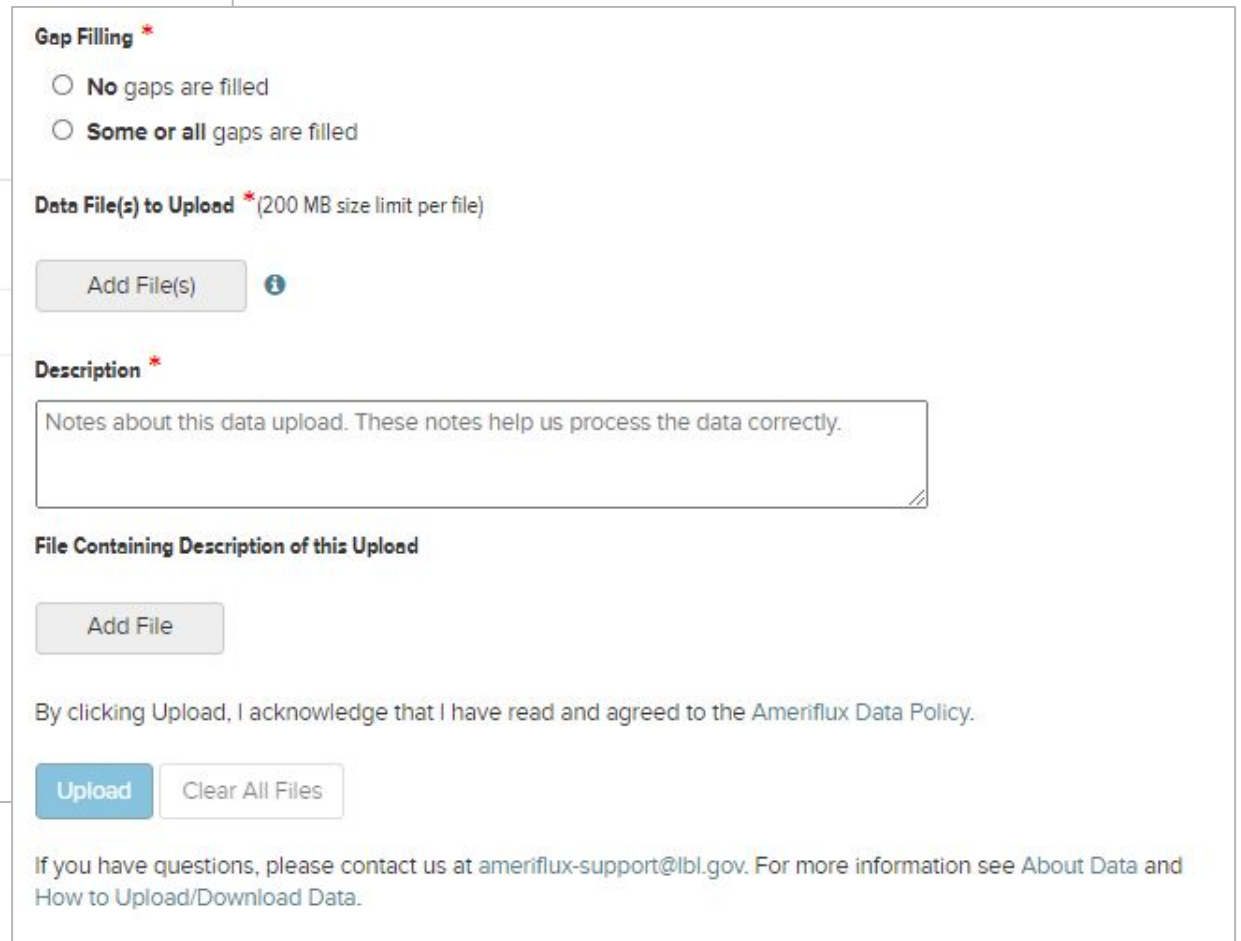
Symbol	Status
●○○○○	Format: Waiting for Data Team
●○○○○ ▼	Format: Waiting for Site Team
●●○○○	Ready for Data QA/QC
●●●○○	Data: Waiting for Data Team
●●●○○ ▼	Data: Waiting for Site Team
●●●●○	New Data Pending Release
●●●●● ✓	Data Products Up-to-Date

Site	Published Version	Progress	Status	Issue	Issue Date	Uploader
US-Tw1	2-1	●●●●○	New Data Pending Release	QAQC-1130	2017-11-21	Sara Knox
US-Twt	4-1	●●●●○	New Data Pending Release	QAQC-1095	2017-11-13	Elke Eichelmann
US-Myb	3-1	●●●○○ ▼	Data: Waiting for Site Team	QAQC-1094	2017-11-13	Samuel Chamberlain
US-Tw4	3-1	●●●●○	New Data Pending Release	QAQC-1092	2017-11-13	Elke Eichelmann
US-Sne	1-4	●●●●● ✓	Published as version 1-4	QAQC-809	2017-09-12	Kyle S Hemes
US-Snd	2-1	●●○○○	Ready for Data QA/QC	QAQC-666	2017-08-30	Norm Beekwilder
US-Tw2	1-1	●●○○○	Ready for Data QA/QC	QAQC-649	2017-08-30	Norm Beekwilder

Data Submission 101

- Register a user account on AmeriFlux
- Register a new site
- **Prepare data in FP-In Standard Format**
- Upload file to the Upload Portal





https://ameriflux.lbl.gov/data/upload-data/

Standard Format (FP-In)

Home | About | Community | Sites | Data

Home / Half-Hourly / Hourly Data Upload Format

Half-Hourly / Hourly Data Upload Fo

[pdf]

This document describes variable labels and file formatting (FP-In) for uplo
AmeriFlux and the European Fluxes databases.

Use these instructions to prepare BASE-In file(s) containing data that are c
hourly intervals* for a certain period of time (e.g., a month, a year). Note: d
between any two sequential values.

We refer to general formats described in *Data Variables* and add addition

- Data processing
- Temporal representativeness and timestamps
- File format and content
- Data Variable: Base names
- Data Variable: Qualifiers

* Contact ameriflux-support@lbl.gov if you need to upload data reported a

2. Data Variable: Base names

Base names indicate fundamental quantities that are either measured or calculated / derived. They can also indicate quantified quality information.

Table 1. Base names for data variable labels

Export to CSV

Name	Description	Units
TIMEKEEPING		
TIMESTAMP_START	ISO timestamp start of averaging period (up to a 12-digit integer as specified by the data's temporal resolution)	YYYYMMDDHHMM
TIMESTAMP_END	ISO timestamp end of averaging period (up to a 12-digit integer as specified by the data's temporal resolution)	YYYYMMDDHHMM
GASES		
CH4	Methane (CH4) mole fraction in wet air	nmolCH4 mol-1
CH4_MIXING_RATIO	Methane (CH4) in mole fraction of dry air	nmolCH4 mol-1
CO	Carbon Monoxide (CO) mole fraction in wet air	nmolCO mol-1
CO2	Carbon Dioxide (CO2) mole fraction in wet air	µmolCO2 mol-1
CO2_MIXING_RATIO	Carbon Dioxide (CO2) in mole fraction of dry air	µmolCO2 mol-1
CO2_SIGMA	Standard deviation of carbon dioxide mole fraction in wet air	µmolCO2 mol-1
CO2C13	Stable isotopic composition of CO2 - C13 (i.e., d13C of CO2)	‰ (permil)
FC	Carbon Dioxide (CO2) turbulent flux (no storage correction)	µmolCO2 m-2 s-1
FCH4	Methane (CH4) turbulent flux (no storage correction)	nmolCH4 m-2 s-1
FN2O	Nitrous oxide (N2O) turbulent flux (no storage correction)	nmolN2O m-2 s-1

https://ameriflux.lbl.gov/half-hourly-hourly-data-upload-format/

File Format Specification

- Any time period (e.g., full record, year, quarter)
- ASCII, comma delimited file (CSV), no quotes
- Single row header, no unit row
- **TIMESTAMP_START** and **TIMESTAMP_END** always in first two columns.
  - ISO time format: YYYYMMDDHHMM, e.g., 201810220930

TIMESTAMP_START	TIMESTAMP_END	CO2	FC	USTAR	TA_1_1_1	WD	WS	NEE
200401010000	200401010030	-9999	-9999	-9999	-9999	-9999	-9999	-9999
200401010030	200401010100	-9999	-9999	-9999	-9999	-9999	-9999	-9999
200401010100	200401010130	371.419	0.561	0.099	-1.172	108.304	1.19	0.563
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200401010400	200401010430	374.326	0.847	0.029	-2.483	42.956	1.259	1.395

Common Format QA/QC Issues

Top issue

- Scientific notation in timestamps: **201910280000 -> 2019E8 -> 201900000000**

Other issues

- Malformed timestamps
- Duplicate variable names
- Non-standard variable name
- Incorrect use of _F and _PI qualifiers
- Data gaps too large

Sometimes detected in Data QA/QC

- Unrecognized missing values
- Non-standardized units or sign convention

Common Format QA/QC Issues

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- Scientific notation in timestamps: **201910280000 -> 2019E8 -> 201900000000**

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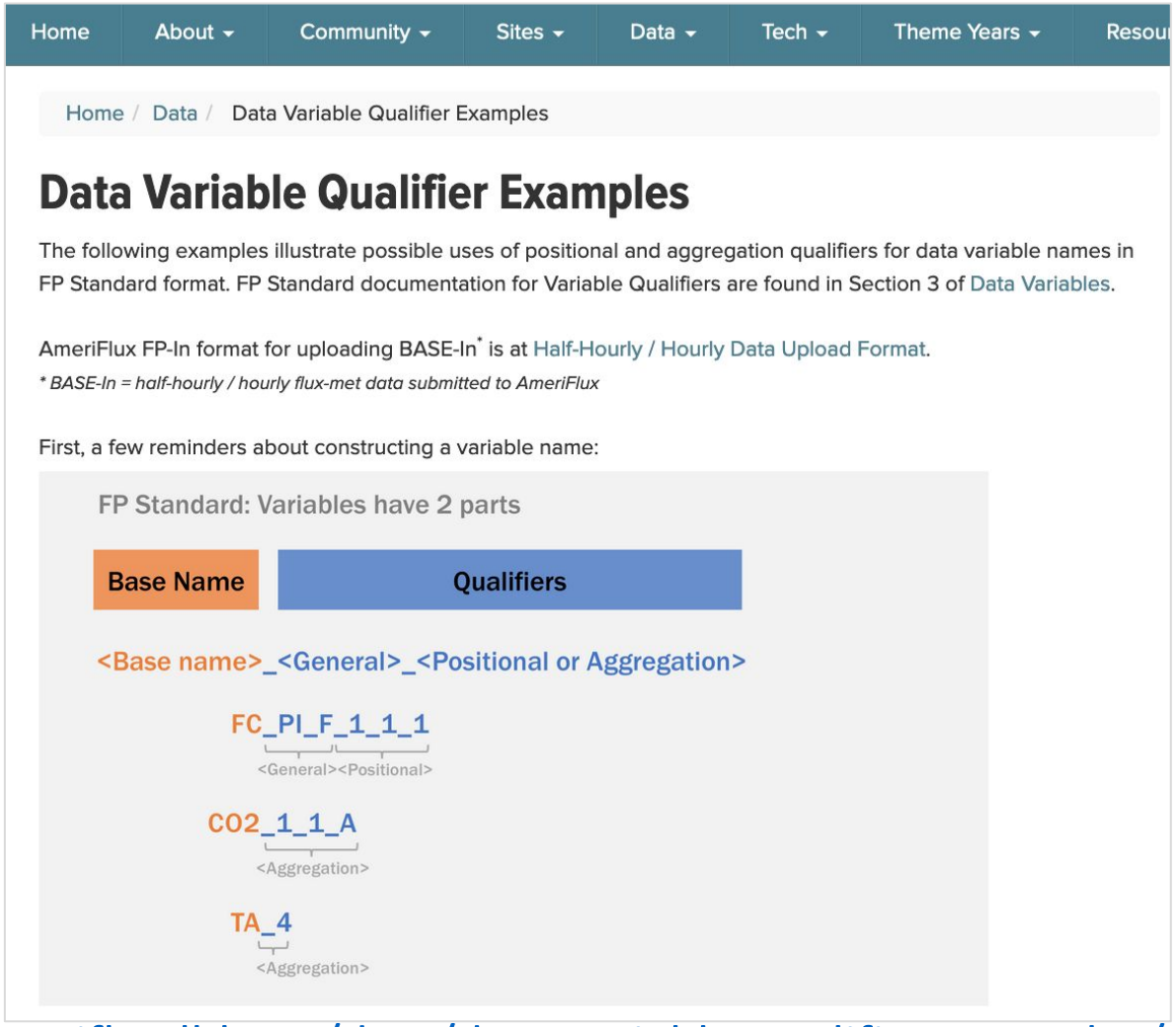
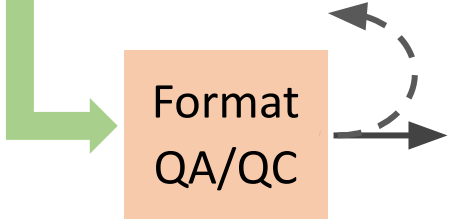
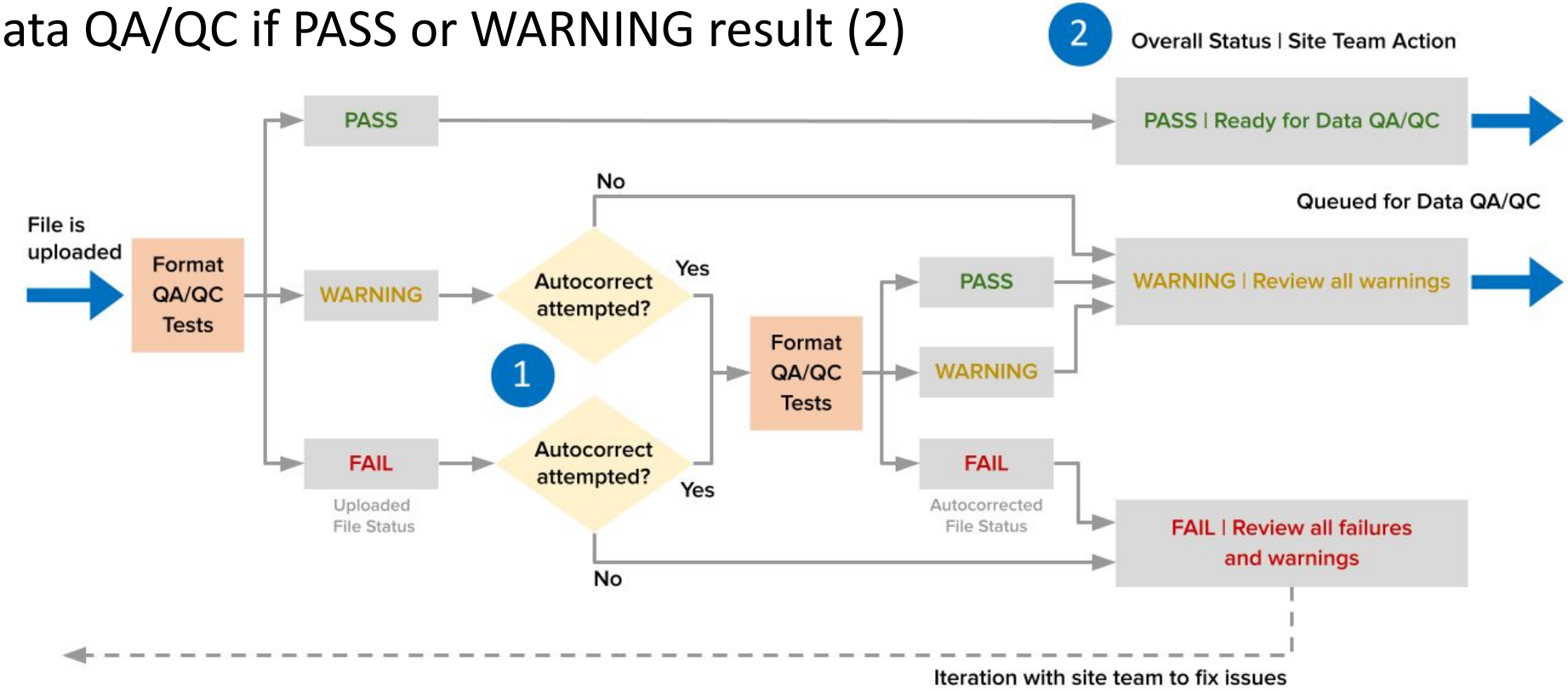


https://ameriflux.lbl.gov/data/data-variable-qualifier-examples/



Format QA/QC Processing

- Fully-automated process begins immediately upon upload
- Format QA/QC Report links emailed to uploader ~15 minutes after upload
- Per file evaluation
- One attempt to auto-correct any issues (1)
- File is queued for Data QA/QC if PASS or WARNING result (2)



Format QA/QC

Format QA/QC Report

AmeriFlux QAQC-3065 Format Results - ACTION REQUIRED | CC-sss data uploaded on Sep 04, 2019 Inbox ×

Dear Danielle Christianson,

Thank you for uploading data for CC-sss on Sep 04, 2019.

Format QA/QC results

CC-sss_HR_200001011000_200001012000_bad29.csv:

- **FAIL | Replacement file required.**
- Read details in this report: https://ameriflux.lbl.gov/qaqc-report/?site_id=CC-sss&report_id=63097

CC-sss_HR_200001011000_200001012000_scinot.csv:

- **FAIL | Replacement file required.**
- Read details in this report: https://ameriflux.lbl.gov/qaqc-report/?site_id=CC-sss&report_id=63096

Format QA/QC assesses the compliance of your data submission with AmeriFlux FP-In format (https://ameriflux.lbl.gov/half-hourly-hourly-data-upload-format/. If needed, you can re-upload your data at https://ameriflux.lbl.gov/data/upload-data/ and/or reply to this email to discuss with us.

View the status of all your uploaded files at https://ameriflux.lbl.gov/qaqc-reports-data-team/.

If all files passed Format QA/QC and there are no pending issues for your site, Data QA/QC will be run. You can track communications on this Format QA/QC report at QAQC-3065 using your AmeriFlux account ID and password to login.

Sincerely,
AMP Data Team

Format QA/QC

Format QA/QC Report

QA/QC Report: Format

This report details results of the AmeriFlux QA/QC data processing pipeline.
For more information, see How to Read This Report, QA/QC Results Definitions,

PASS **Ready for Data QAQC**
No further action needed by the site team.

Uploaded File Report US-PFa_HR_201801010000_201901010000.csv

Site ID: US-PFa
Site contact: Ankur Desai

Uploader: Ankur Desai
Upload date: 2018-Jul-16 11:44
Uploaded filename: US-PFa_HR_201801010000_201901010000-20180

Format QA/QC report summary:
All format QA/QC tests attempted. No issues were encountered. AMP will

Test	Results	Ad
All Format QA/QC tests passed.	✔ PASS	

Variable names found in the file:
TIMESTAMP_START, TIMESTAMP_END, CO2_1_1_1, CO2_1_2_1, CO2
CH4_1_1_1, CH4_1_2_1, CH4_1_3_1, FC_1_1_1, FC_1_2_1, FC_1_3_1
SCH4_1_1_1, H, H_1_1_1, H_1_2_1, H_1_3_1, LE, LE_1_1_1, LE_1_2_
SLE_1_2_1, SLE_1_3_1, WD_1_1_1, WD_1_2_1, WD_1_3_1, WD_F_1_
USTAR_1_1_1, USTAR_1_2_1, USTAR_1_3_1, USTAR_F_1_3_1, PA_1_
VPD_F_1_3_1, SWC_1_1_1, PPFD_IN_1_1_1, P, NEE, NEE_F, NEE_1_

Processing code version: 0.4.19
Processing log file: http://ameriflux-data.lbl.gov/QAQCLogs/QAQC_repo

QA/QC Report: Format

This report details results of the AmeriFlux QA/QC data processing pipeline.
For more information, see How to Read This Report, QA/QC Results Definitions, FAQ, and Up

WARNING **Review all warnings**
If autocorrected file is OK, no action is needed by the site team. If correcti

Autocorrected File Report US-MOz_HH_200501010000_200601010000.csv

Site ID: US-MOz
Site contact: Jeffrey Wood

Uploader: AMP Data Team (original file uploaded by Format QAQC Pipeline)
Upload date: 2018-Aug-15 17:27
Uploaded filename: US-MOz_HH_200501010000_200601010000-20180815172726

Format QA/QC report summary:
All format QA/QC tests attempted. Issues were encountered. AMP attempted to autor
warnings below. If autocorrected file is OK, no action is needed by the site team. If cor

Test	Results	Additional Info
AMP made these autocorrections.	? WARNING	• Filename cor time)
Any Variables suspected gap-fill?	? WARNING	These variables no missing valu
Any Variables with ALL Data Missing?	? WARNING	These variables **H_1_1_1**. Previ be overwritten.

Variable names found in the file:
TIMESTAMP_START, TIMESTAMP_END, P_1_1_1, PPFD_IN_1_1_1, PPFD_OUT_1
LW_IN_1_1_1, LW_OUT_1_1_1, NETRAD_1_1_1, TA_1_1_1, RH_1_1_1, CO2_1_1_
USTAR_1_1_1, TS_1_1_1, SWC_1_1_1, G_1_1_1, PA_1_1_1, FC_1_1_1, SC_1_1_
NEE, NEE_F

Processing code version: 0.4.23
Processing log file: http://ameriflux-data.lbl.gov/QAQCLogs/QAQC_report_US-MOz_

Uploaded File Report US-MOz_HH_20050101000000_20060101000000.csv

⚠ **Consider** revising your file preparation for future submissions by opening and reviewing t

QA/QC Report: Format

Howdy, Danielle Chris

This report details results of the AmeriFlux QA/QC data processing pipeline.
For more information, see How to Read This Report, QA/QC Results Definitions, FAQ, and Upload Format Instructions

FAIL **Review failures and warnings**
Upload a corrected replacement file.

Uploaded File Report Tonzi-understory-2016.dat Report ID: 8052

Site ID: US-Ton
Site contact: Dennis Baldocchi

Uploader: Siyan Ma
Upload date: 2017-Mar-22 14:26
Uploaded filename: Tonzi-understory-2016-2017011912065058.dat

Format QA/QC report summary:
All format QA/QC tests attempted. Issues were encountered. Please correct issues and upload a replacement file.

Test	Results	Additional Information
Are Timestamp variables present?	⚠ FAIL	Expected timestamp variable(s) **TIMESTAMP_START, TIMESTAMP_END** is / are missing.
Timestamp problem encountered.	⚠ FAIL	Filename Matches File Contents, Timestamp Column Resolution, Timestamp Row Resolution, Timestamp Duplicates
Issues that cannot be autocorrected.	⚠ FAIL	Unable to repair timestamps. AutoRepair FAILED.
Is Filename Format valid?	⚠ FAIL	These filename components are not in the standard AmeriFlux format: **extension is not csv**
Are Timestamp variables as expected?	⚠ FAIL	These unexpected variables were found in columns 1 & 2 instead of TIMESTAMP_START and TIMESTAMP_END: **yr, day**
Is Filename Format valid?	? WARNING	These filename components are not in the standard AmeriFlux format: **incorrect number of components (expect timestamp errors)**
Are Data Variable names in correct format?	? WARNING	These variable names are not in standard AmeriFlux format: **yr, day, endhour, endmin, DOY, FC_WPL_2D, fc_flag, WC_2D, CO2_LI7500, RHOC, CO2_var, CO2_skewness, CO2_kurtosis, RHOQ, q_var, q_skewness, q_kurtosis, Tsonic, Tsonic_var, Tsonic_skewness, Tsonic_kurtosis, Wind_Direction, Wind_Velocity, Friction_Velocity, stdw, wbar, w_var, w_kurtosis, u2D_var, v2D_var, Tair, absolute_humidity, Vapor_pressure_deficit, Relhumidity, Pressure, TSOIL2, TSOIL4, TSOIL8, TSOIL16, TSOIL32, soil_moisture_00cm, soil_moisture_20cm, soil_moisture_50cm, precipitation**. They will not be included in the standard AmeriFlux data products.

Format QA/QC

Format QA/QC Report

New online QA/QC Documentation available
https://ameriflux.lbl.gov/data/data-processing-pipelines/format-qaqc/

Overall Status

Site Team Action

Autocorrected File Report
(if autocorrections made)

Autocorrections
(if attempted)

Test Results

Uploaded File Report

QA/QC Report: Format

This report details results of the AmeriFlux QA/QC data processing pipeline.
For more information, see How to Read This Report, QA/QC Results Definitions, FAQ, and Upload Format Instructions

WARNING **Review all warnings**
If autocorrected file is OK, no action is needed by the site team. If corrections are needed, upload a replacement file.

Autocorrected File Report US-MOz_HH_200501010000_200601010000.csv Report ID: 26775

Site ID: US-MOz
Site contact: Jeffrey Wood

Uploader: AMP Data Team (original file uploaded by Format QAQC Pipeline)
Upload date: 2018-Aug-15 17:27
Uploaded filename: US-MOz_HH_200501010000_200601010000-2018081517272600.csv

Format QA/QC report summary:
All format QA/QC tests attempted. Issues were encountered. AMP attempted to automatically correct the issues. Please review the warnings below. If autocorrected file is OK, no action is needed by the site team. If corrections are needed, upload a replacement file.

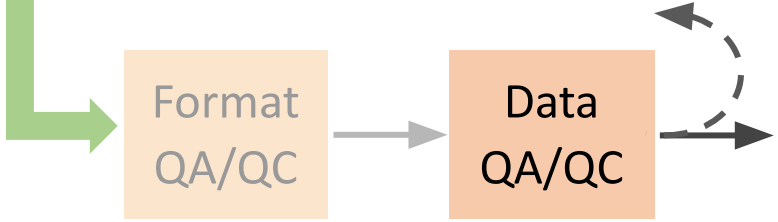
Test	Results	Additional Information
AMP made these autocorrections.	WARNING	• Filename components fixed: ts-start (start time); ts-end (end time)
Any Variables suspected gap-fill?	WARNING	These variables are suspected to be gap-filled because they have no missing values: P_1_1_1
Any Variables with ALL Data Missing?	WARNING	These variables have all data missing: **FC_1_1_1, LE_1_1_1, H_1_1_1**. Previously uploaded data with the same time period will be overwritten.

Variable names found in the file:
TIMESTAMP_START, TIMESTAMP_END, P_1_1_1, PPFD_IN_1_1_1, PPFD_OUT_1_1_1, SW_IN_1_1_1, SW_OUT_1_1_1, LW_IN_1_1_1, LW_OUT_1_1_1, NETRAD_1_1_1, TA_1_1_1, RH_1_1_1, CO2_1_1_1, H2O_1_1_1, WS_1_1_1, WD_1_1_1, USTAR_1_1_1, TS_1_1_1, SWC_1_1_1, G_1_1_1, PA_1_1_1, FC_1_1_1, SC_1_1_1, LE_1_1_1, SLE_1_1_1, H_1_1_1, SH_1_1_1, NEE, NEE_F

Processing code version: 0.4.23
Processing log file: http://ameriflux-data.lbl.gov/QAQCLogs/QAQC_report_US-MOz_26775_20180815173024.log

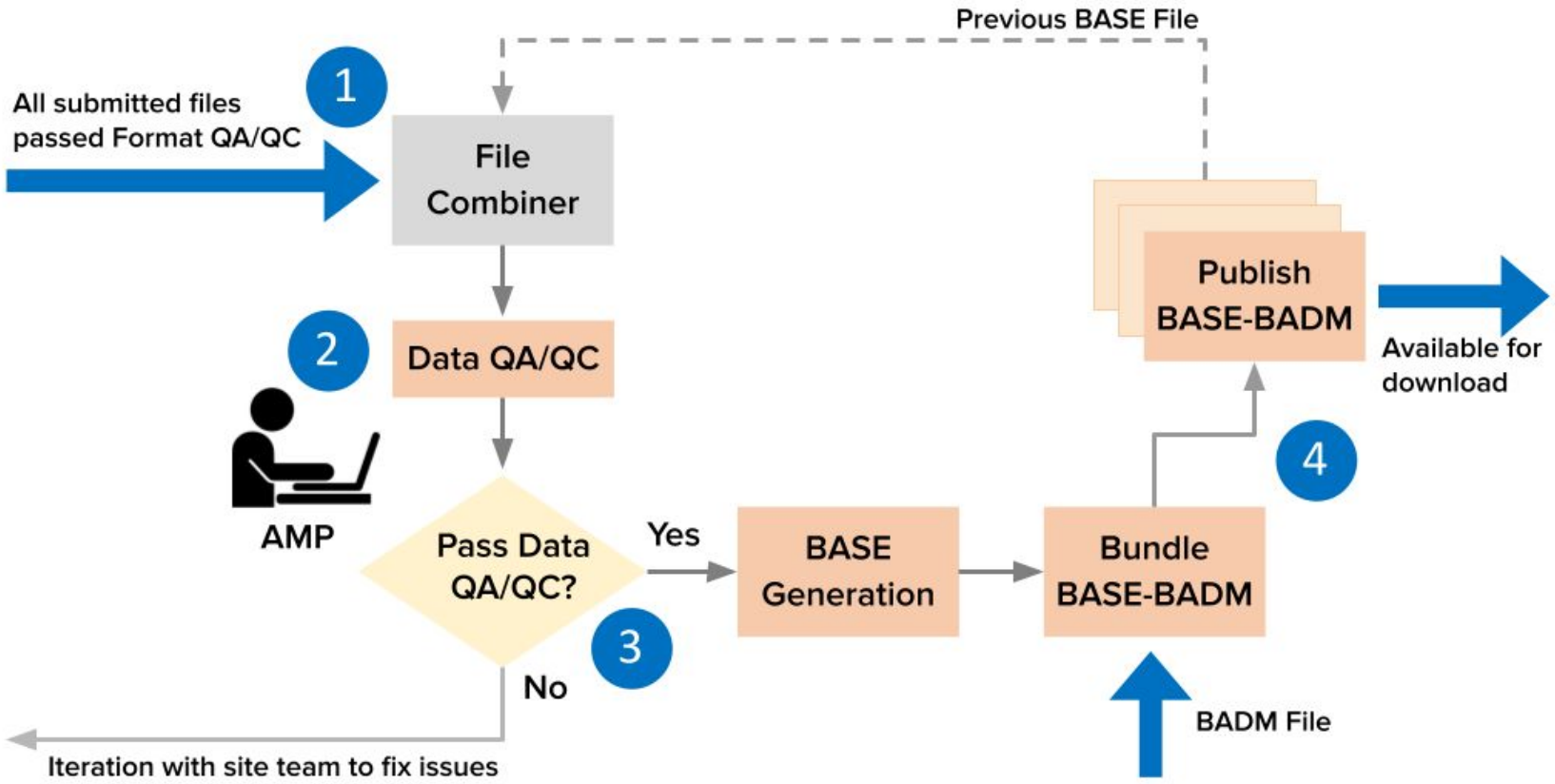
Uploaded File Report US-MOz_HH_20050101000000_20060101000000.csv Report ID: 26761

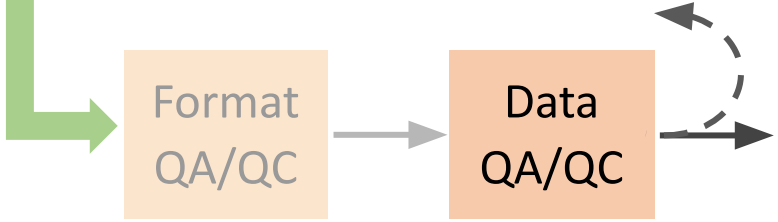
⚠ **Consider** revising your file preparation for future submissions by opening and reviewing the Uploaded File Report.



Data QA/QC and Report Email

- Most recently uploaded data that pass Format QA/QC
- Performed on entire data record (recent uploaded + previous BASE)
- Secondary check complementary to site team's QA/QC
- No data filtering/correction done by AMP





Data QA/QC Modules

- Adapted from Pastorello et al., 2014, IEEE, DOI: 10.1109/eScience.2014.45
- Adopted in FLUXNET2015 & all BASE published since 2017

Current Implemented Modules

- Timestamp alignment
- Multivariate comparison
- Physical range
- Diurnal & Seasonal pattern
- USTAR filtering

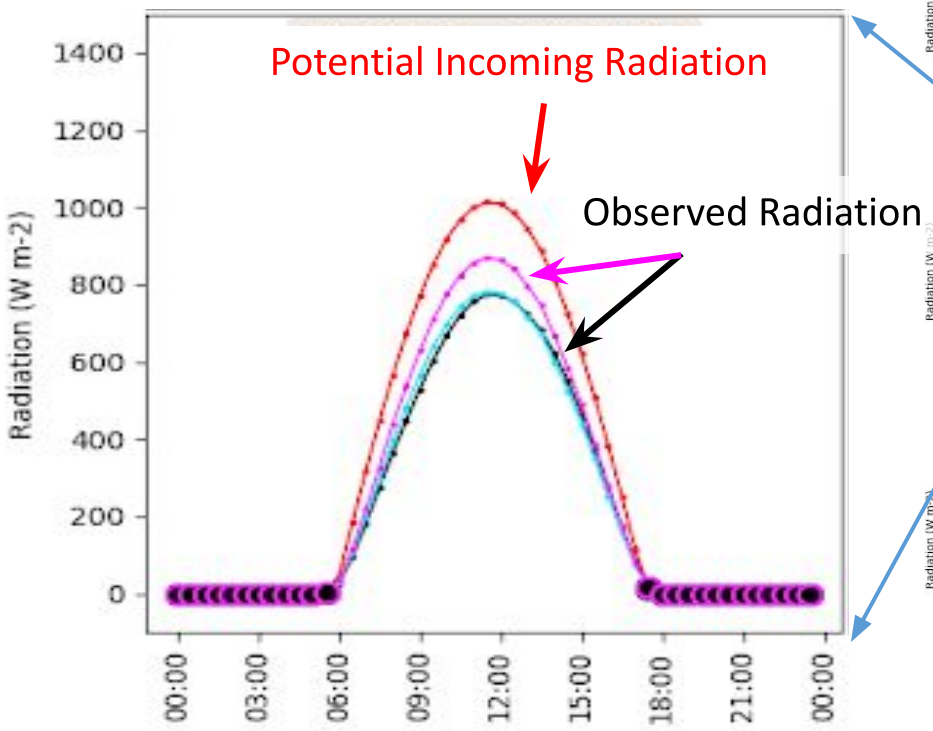
New Data QA/QC Documentation available online
https://ameriflux.lbl.gov/data/data-processing-pipelines/data-qaqc/

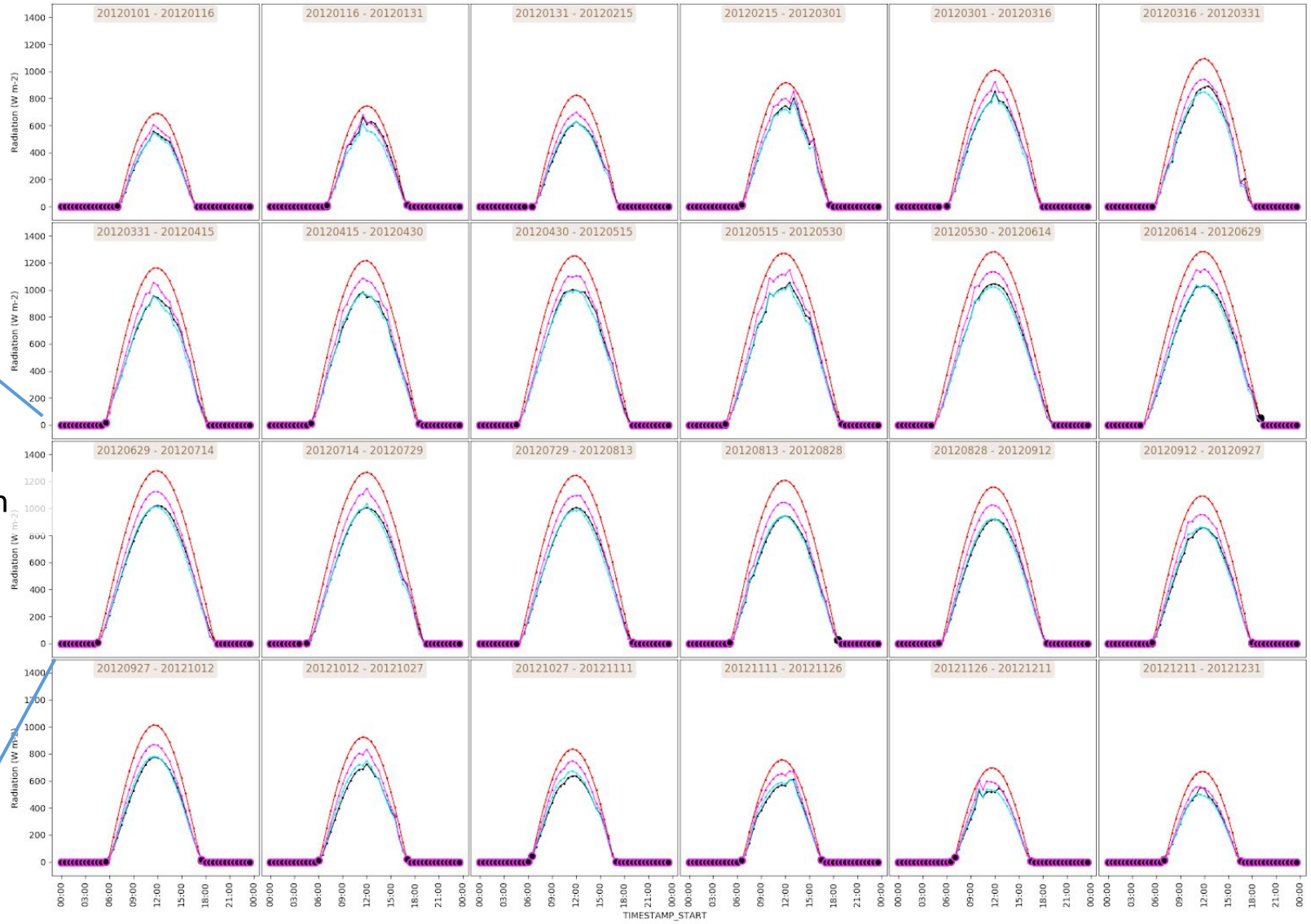
Timestamp Alignment Check

- Misspecified timestamps
- Time zone specification
- Daylight saving
- Datastream not synchronized

SW_1_1_1 has max cross-correlation 0.997 at lag 0
PPFD_IN_1_1_1 has max cross-correlation 0.998 at lag 0

Max Diurnal Composite - 15 day window





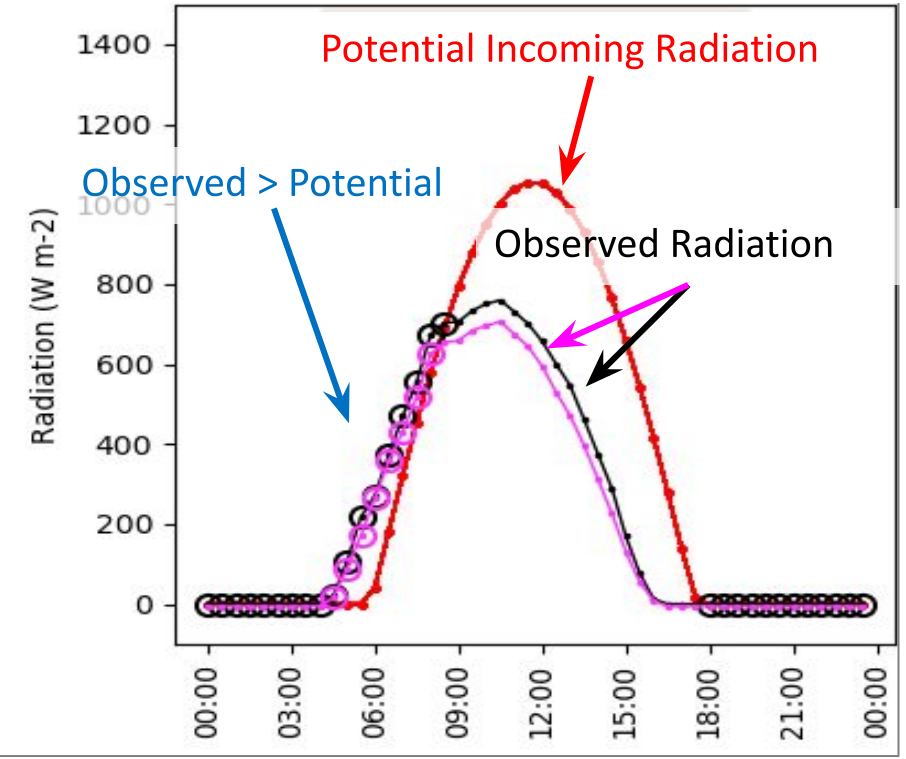
Timestamp Alignment Check

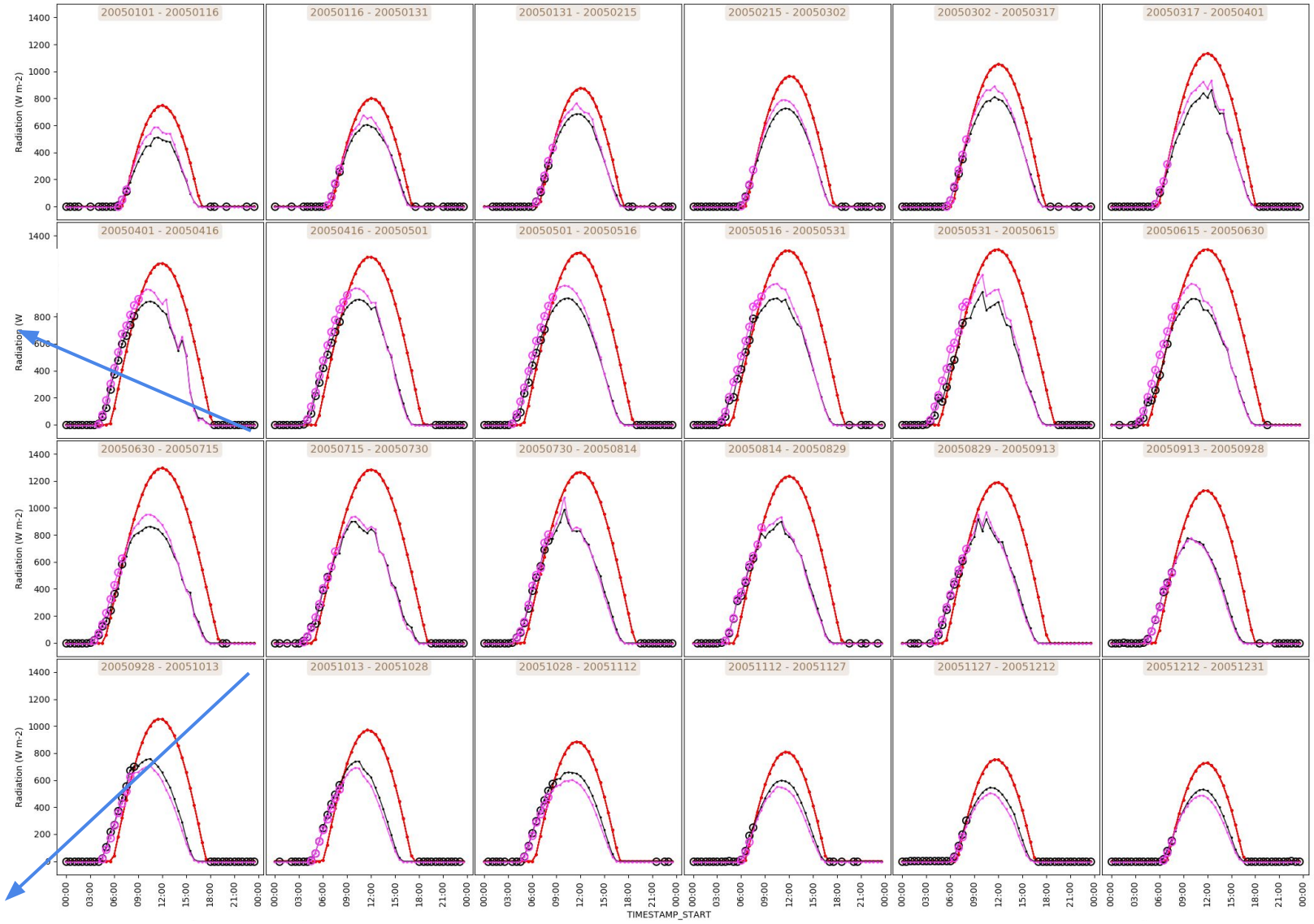
- Consistent shift
  - Timestamp – End or Start
  - Time zone specification
- Inconsistent shift
  - Daylight saving
  - Clock resetting

SW_1_1_1 has max cross-correlation 0.984 at lag 2

PPFD_IN_1_1_1 has max cross-correlation 0.978 at lag 2

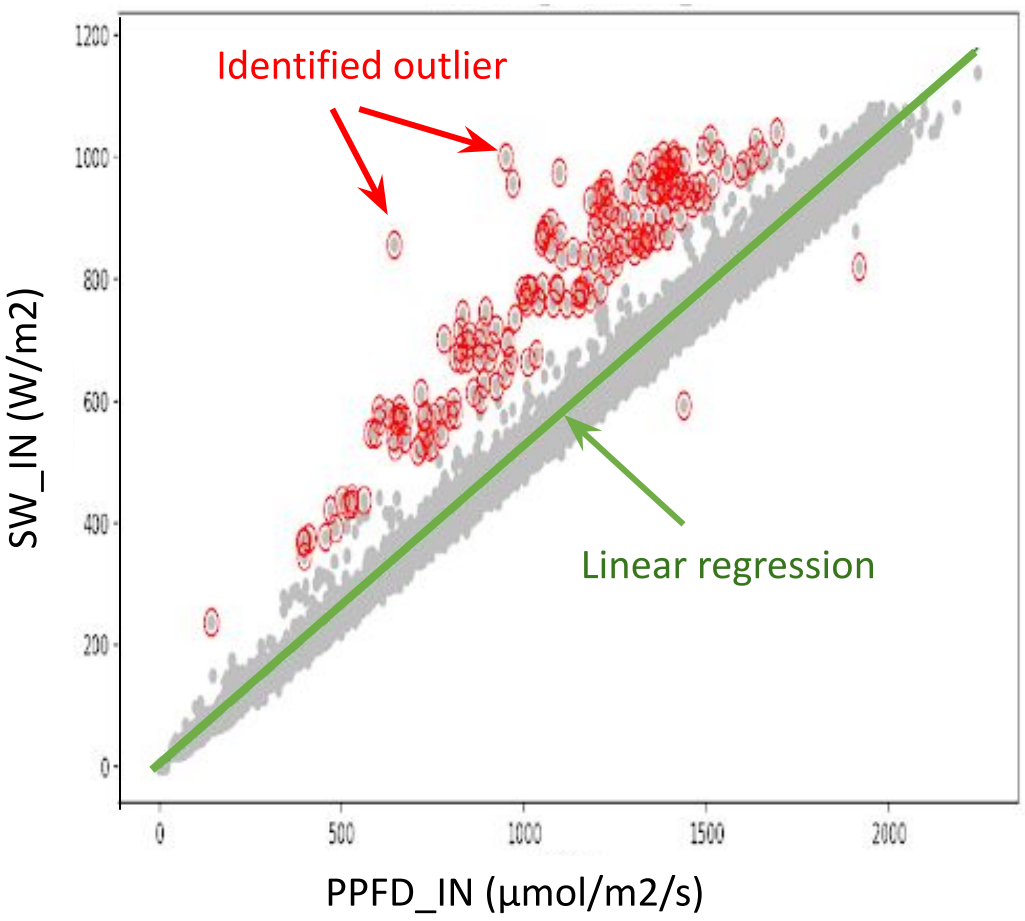
Max Diurnal Composite - 15 day window

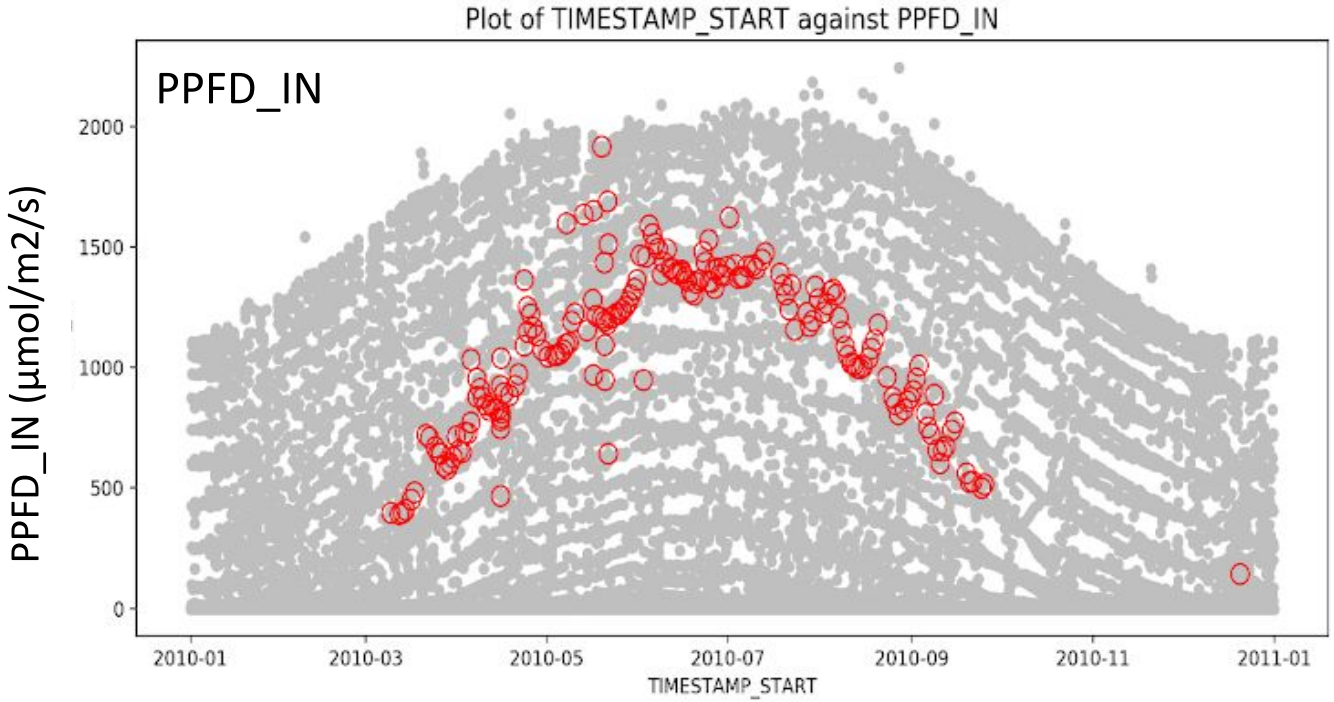


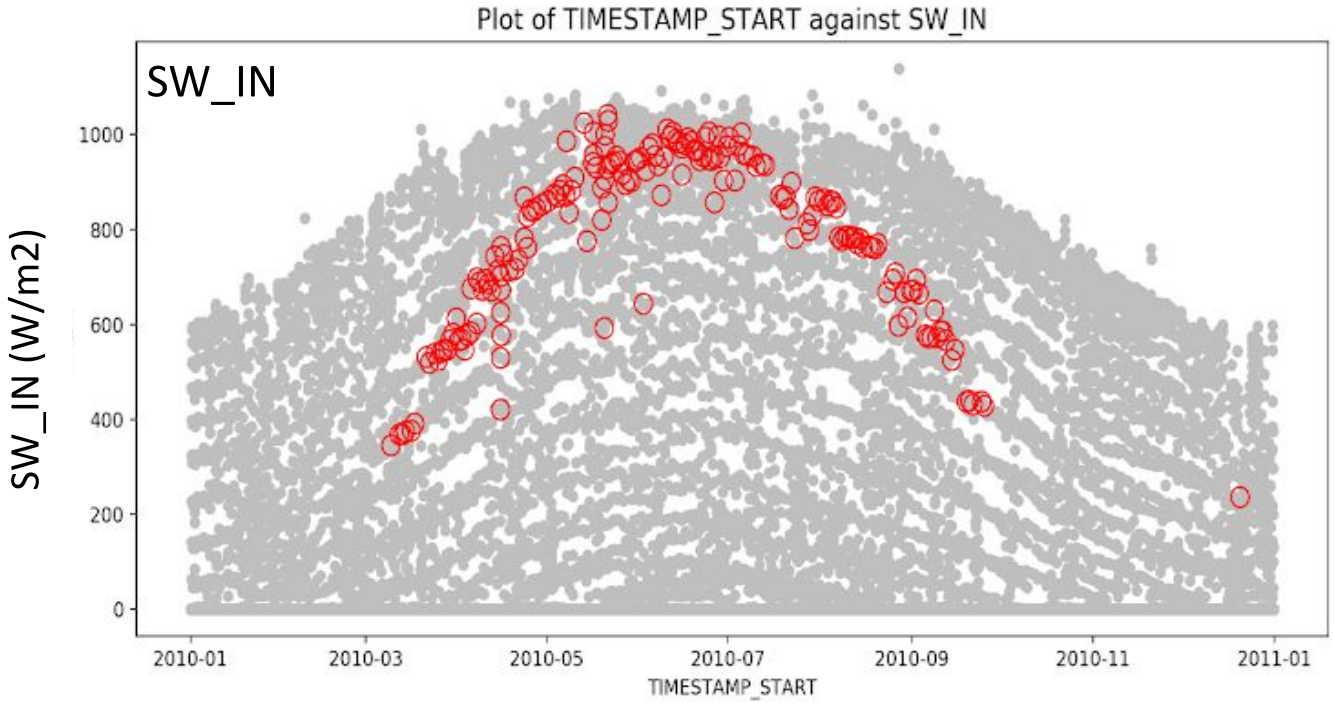


Multivariate Comparison

- Short-term Inconsistency
  - Sensor malfunction
  - shaded radiation

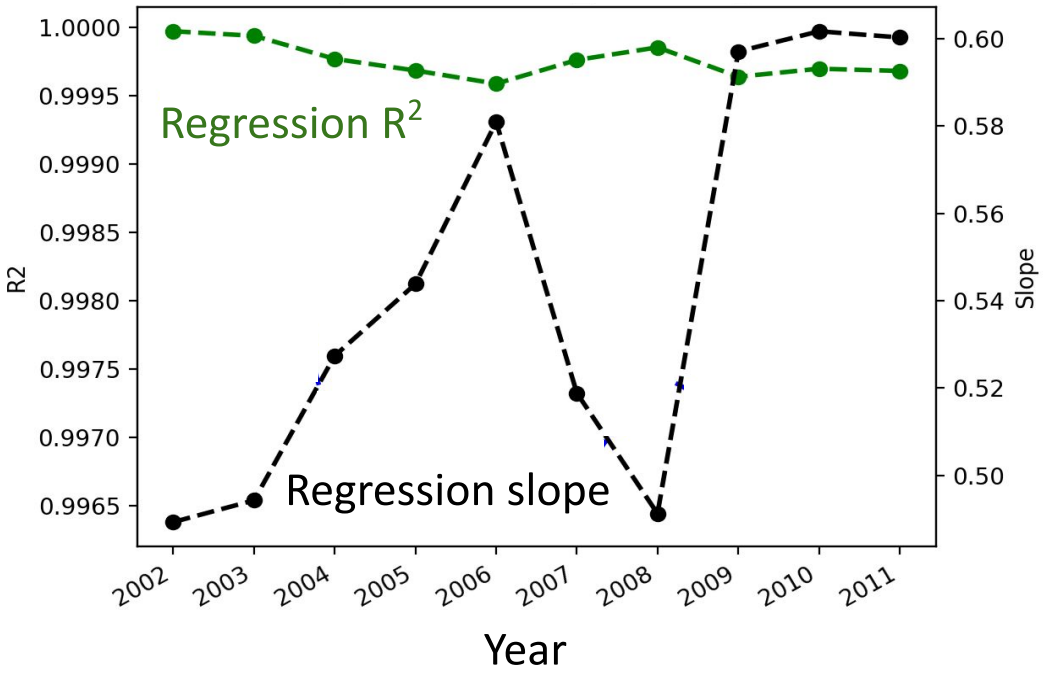


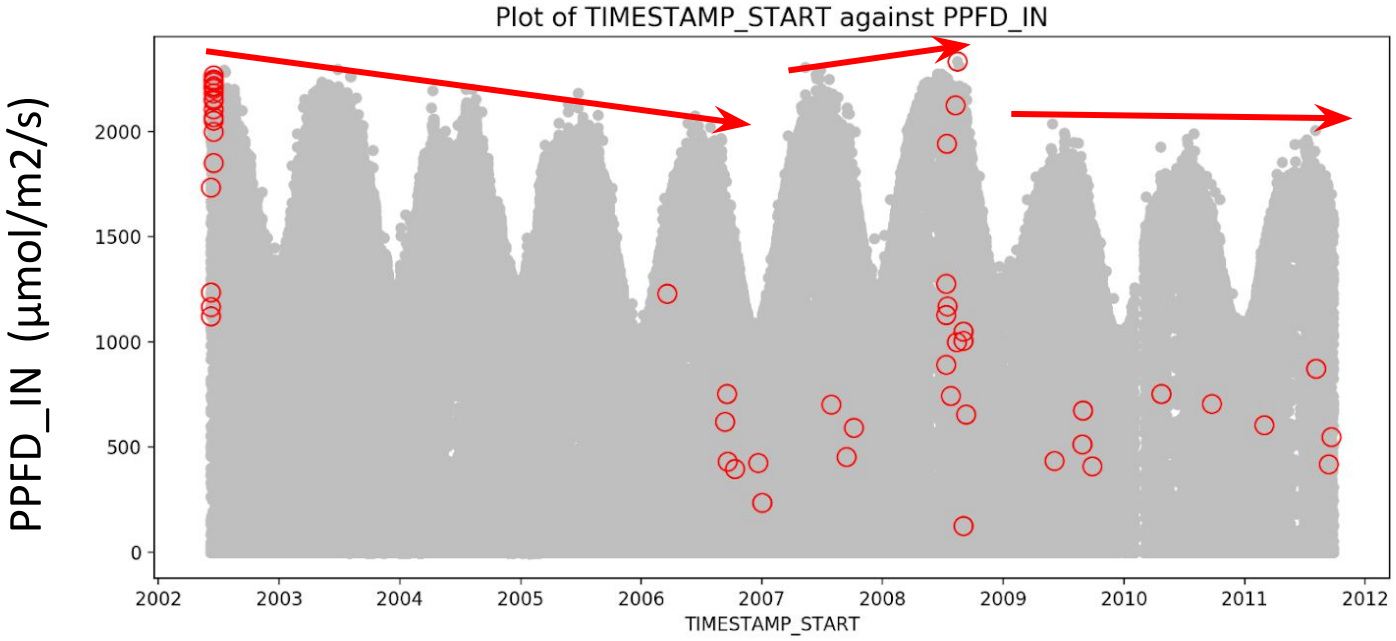


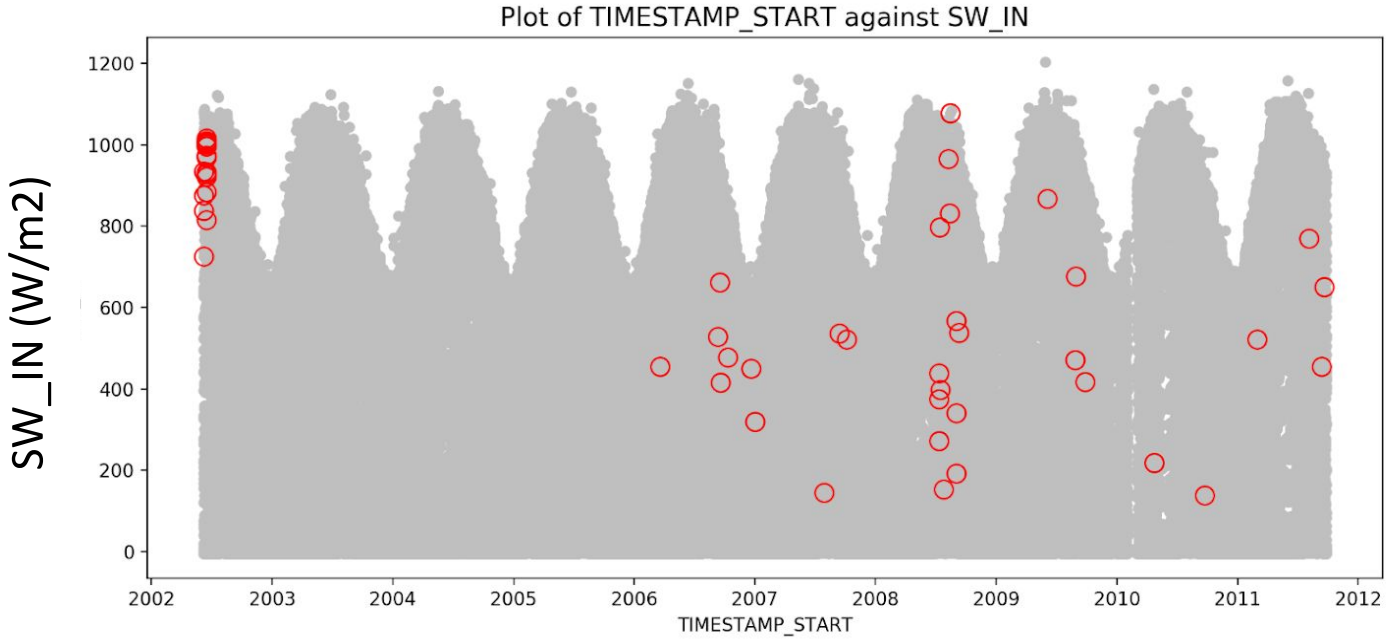


Multivariate Comparison

- Sensor Degradation
  - Quantum sensor
- Change of Sensor
  - Replacement of sensor
  - Calibration
  - Change of measurement location







Format QA/QC → Data QA/QC

Data QA/QC and Report Email

[AmeriFlux] (QAQC-2405) Data Results | cc-xxx HH 20020101 - 20180803 | Using uploads through Sep 19, 2018

Inbox ×

AMF Data Team (AMF-JIRA) via berkeley.edu
to dschristianson

AMF Data Team **commented** on QAQC-2405

Re: Data Results | CC-XXX HH 20020101 - 20180803 | Using uploads through Sep 19, 2018

Dear Tower Team

Thank you for your data submissions for CC-XXX site.

In the context of the new processing for AmeriFlux data products, we are applying a new Data QA/QC scheme that follows the independent analysis of your data and help identify potential issues in data formats and contents earlier in the pipeline.

Briefly, Data QA/QC includes the inspection of sign conventions, ranges, diurnal-seasonal patterns, and potential outliers of var SW_IN) are also analyzed to detect potentially erroneous data. The comparison of measured radiation (e.g., PPFD_IN, SW_IN) t for a given location (i.e., SW_IN_POT) is also analyzed to check the timestamp specification and alignment.

In analyzing your data, we have the following questions where we request your expert opinion and suggestion. Please note that some i your site. Please verify, clarify, or correct the following issues before we can make your data available as an AmeriFlux BASE data prod please upload files using https://ameriflux.lbl.gov/data/upload-data/.

[Data QA/QC]

- Issue #1 .....
- Issue #2 .....
- Issue #3 .....

We hope that this will not take too much time from your work, but it will help to make your data more robust and clear. You can view th https://ameriflux.lbl.gov/qaqc-reports-data-team/.

Please reply to this email with any questions. You can track communications on this Data QA/QC at QAQC-2405 using your AmeriFlux account I

Best regards and thanks for the collaboration,
AmeriFlux Data Team

FTP link to Data QA/QC, where you can access all figures and intermediate files generated during Data QA/QC:
ftp://ftp.fluxdata.org/.ameriflux_downloads/data/CC-XXX/######/####/output

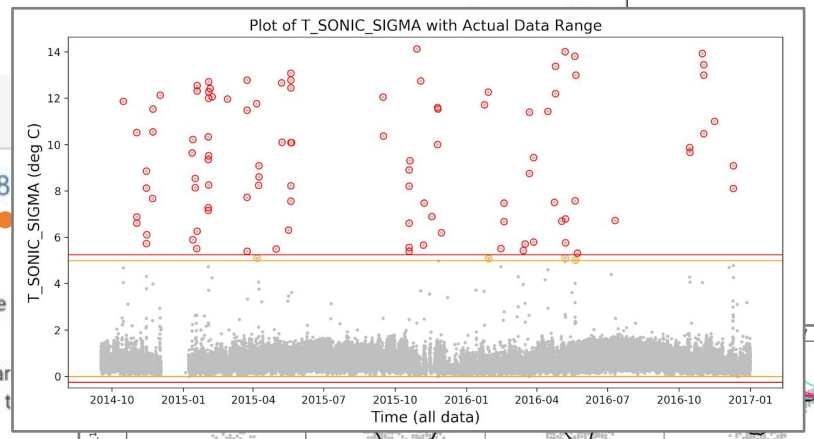
Format QA/QC reports associated with this Data QA/QC, where you can glance at the file sources used in this Data QA/QC:
http://ameriflux.lbl.gov/qaqc-report/?site_id=CC-XXX&report_id=######

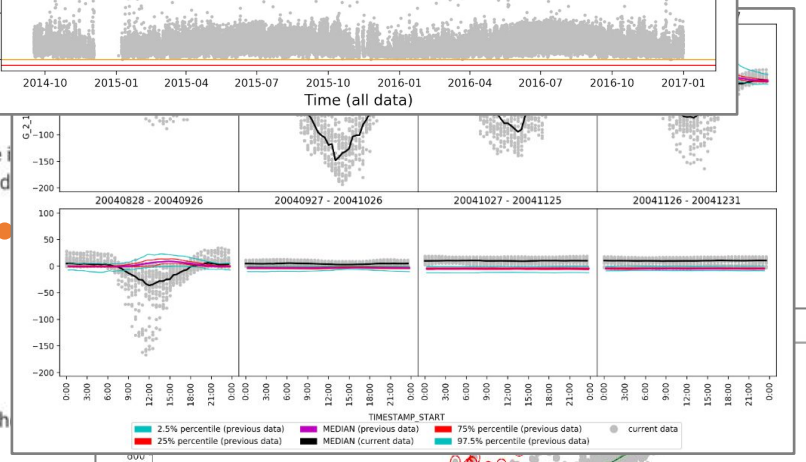
Data QA/QC Summary

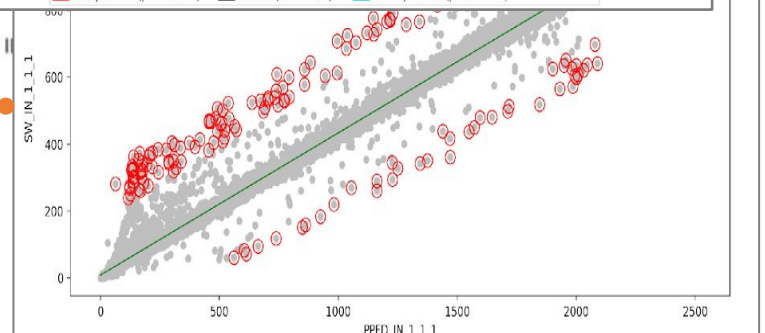
Data Issues

Additional Links

Explanatory Figures







Feedback from recent data uploaders

John Knowles
USDA ARS Southwest Watershed Research Center

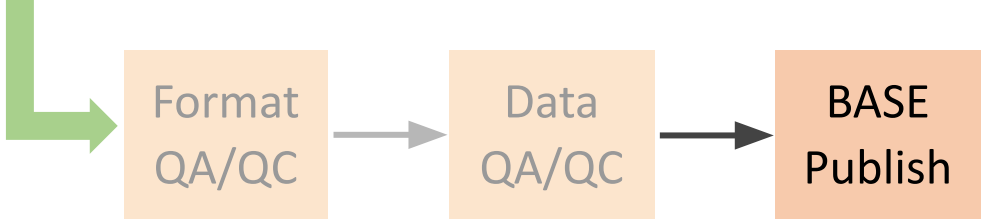
US-MtB (Mt Bigelow)
US-NR3, US-NR4 (Niwot Ridge Alpine)

Alejandro Cueva
Arizona State University

MX-EMg (El Mogor)

Marguerite Mauritz-Tozer
The University of Texas at El Paso

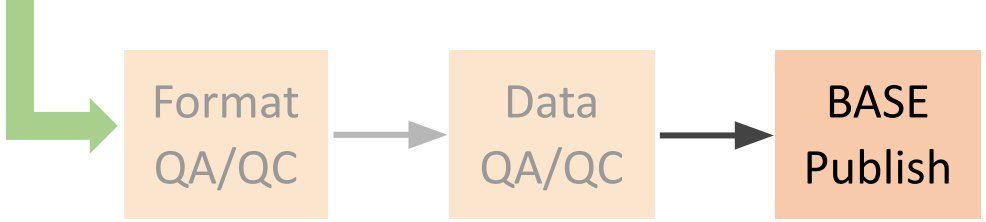
US-Jo1 (Jornada Experimental Range)



BASE Data Publish

Versioning

- <data_version>-<processing_version>
- Filename, Download Log, Change Log, DOI (*coming soon*)



BASE Data Publish

Versioning

- <data_version>-<processing_version>
- Filename, Download Log, Change Log, DOI (*coming soon*)

Bundled with BADM (zip file)

Downloadable

Format QA/QC → Data QA/QC → BASE Publish

BASE Data Publish

https://ameriflux.lbl.gov/data/download-data/

Home | About | Community | Sites | Data | Tech | Theme Years | Resourc

Home / Data / Data Change Log – AmeriFlux

Data Change Log – AmeriFlux

This page lists updates and changes to site data across releases of the new format AmeriFlux data available at https://ameriflux.lbl.gov. For further information, check the site pages (linked to the site IDs) and contact the PIs.

Hover over the Site ID in the tables below to view the file version in format "data version-processing version". The file version is also indicated at the end of the downloaded file name.

Notes:

- Beginning August 2018, files with processing version 5 or greater will have the *_PI* qualifier added to the variable name for aggregated variables submitted by the site team. The *_PI* qualifier will also continue to be added to ecosystem data products (GPP, NEE, RECO, and VPD) and gap-filled variables submitted by the site team.
- As of April 2016, all sites with BADM data will be using the new BIF format. For an explanation, visit https://ameriflux.lbl.gov/badm-data-product/.
- Files with processing version 1 are a direct translation of data files generated by CDIAC (formerly Standard L2 data product) to the FP Standard variables and file format. **For all files with processing version 1, VPD_PI is provided in the units kPa (instead of hPa).**

Errata: Files released in September 2017 (processing version 3) had a bug that may impact the naming of variable headers. This has been corrected in processing version 4. We recommend data users download newer versions of the impacted sites.

December 2020

New Sites Added	MX-Aog MX-PMm US-BRG US-BZF US-BZS US-CS4
Updated Sites	US-Bi2 US-SRS

https://ameriflux.lbl.gov/data/data-change-log/

Home | About | Community | Sites | Data | Tech | Theme Years | Resour

Home / Data / Download Data

Download Data

Bulk download in the new file and variable formats is available below (See the README for further information)

For height / depth and instrument model information, see the Measurement Height page.

A request for data will give you the following:

- Download Manifest
- Zip file per site containing both Flux-met data and BADM data

BADM data can be downloaded without Flux-met data if BADM only option is selected below.

☐ **Download BADM data only**

Pick List | Site Sets | Text Input | Site Search

Pick from list

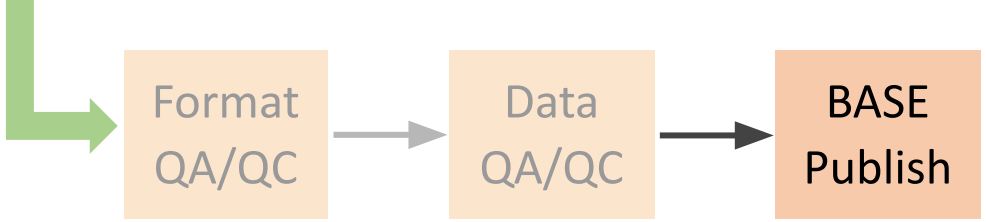
Filter by Site ID or Name

CA-TPD: Ontario - Turkey Point Mature Decidu
CA-WP1: Alberta - Western Peatland - LaBiche
CA-WP2: Alberta - Western Peatland - Poor Fe
CA-WP3: Alberta - Western Peatland - Rich Fe
CR-Lse: La Selva
MX-Aog: Alamos Old-Growth tropical dry fores
MX-EMg: El Mogor
MX-Lpa: La Paz
MX-PMm: Puerto Morelos mangrove
PE-QFR: Quistococha Forest Reserve
US-A03: ARM-AMF3-Oliktok
US-A10: ARM-NSA-Barrow

Select All | Deselect All

Your Selections: 0 sites

Clear List



BASE Data Publish

Versioning

- <data_version>-<processing_version>
- Filename, Download Log, Change Log, DOI (*coming soon*)

Bundled with BADM (zip file)

Downloadable

Update Measurement Height data product

Format QA/QC → Data QA/QC → BASE Publish

BASE Data Publish

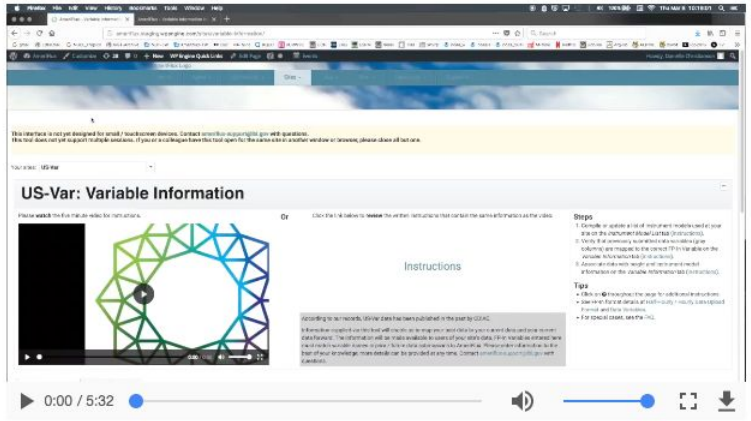
https://ameriflux.lbl.gov/sites/variable-information/

https://ameriflux.lbl.gov/data/measurement-height/

Your sites: US-Ton

US-Ton: Variable Information

Please **watch** the five minute video for instructions.



Or Click the link below to **review** the written instructions that contain the same information as the video:

Instructions

According to our records, US-Ton data have been published in the past by CDIAC.

Information supplied via this tool will enable us to map your past data to your current data and your current data forward. The information will be made available to users of your site's data. FP-In Variables entered here must match variable names in prior / future data submissions to AmeriFlux. Please enter information to the best of your knowledge; more details can be provided at any time. Contact ameriflux-support@lbl.gov with questions.

Steps

1. Compile or update a list of instrument models used at your site on the *Instrument Model List* tab (instructions).
2. Verify that previously submitted data variables (gray columns) are mapped to the correct FP-In Variable on the *Variable Information* tab (instructions).
3. Associate data with height and instrument model information on the *Variable Information* tab (instructions).

Tips

- Click on ❓ throughout the page for additional instructions.
- See FP-In format details at Half-Hourly / Hourly Data Upload Format and Data Variables.
- For special cases, see the FAQ.

Instrument Model List | Variable Information

Save

+ New Variable

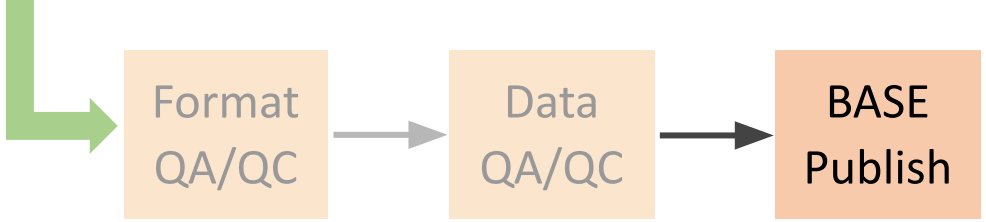
Show Historical Instruments

Customize Columns: 13 Columns Shown

Status
- Reviewed (Saved)
- Updated (NOT Saved)
- Not yet addressed (Saved)
- To be deleted (↺ to undo)

Gray columns are data in older formats and cannot be edited. Hover over column ❓ for details. View only useful columns with Customize Columns at right.

❓ Site Team Variable	❓ CDIAC Description	❓ Early-version BASE Variable	❓ Status	❓ Reset	❓ Delete	❓ FP-In Variable	❓ Reuse values from...	❓ Height (meters)	❓ Instrument Model	❓ Start Date for Height / Instrument Model	❓ Height / Instrument Model Change
FC_WPL_2D	FC_WPL_2D (umol m-2 s-1) CO2 flux with 2D rotation and WPL correction, quality are classified by "Fc_flag"	FC	☐	↺	×	FC_1_1_1		23.5	GA_OP-LI-COR LI-7500 SA-Gill Windmaster Pro	start of data	Add



BASE Data Publish

Versioning

- <data_version>-<processing_version>
- Filename, Download Log, Change Log, DOI (*coming soon*)

Bundled with BADM (zip file)

Downloadable

Update Measurement Height data product

DOI assigned or updated

- One DOI per site for BASE-BADM data package
- *Coming soon*: version will be incorporated into DOI citation
- Update DOI Authorship via online editor (Site Info > BADM tab)

Home | About | Community | Sites | Data | Tech | Theme Years | Resources

Home / Sites / Siteinfo / MX-EMg

MX-EMg: El Mogor

Overview | Windroses | DOI | Data Use Log | Image Ga

Tower_team:

PI: Stephen H. Bullock sbullock@cicese.mx - Centro de Investigación Ci
Superior de Ensenada, Baja California

DataManager: Alejandro Cueva alexcueva88@gmail.com - Arizona State University

Technician: Eulogio López-Reyes elopez@cicese.mx - Centro de Investigación Ci
Superior de Ensenada, Baja California

Lat, Long: 32.0298, -116.6045

Elevation(m): 409

Network Affiliations: AmeriFlux, MexFlux

Vegetation IGBP: CSH (Closed Shrublands: Lands with woody vegetation less than 2 m
canopy cover >60%. The shrub foliage can be either evergreen or de

Climate Koeppen: Bsh (Steppe: very cold winter)

Mean Annual Temp (°C): 17

Mean Annual Precip. (mm): 281

Flux Species Measured: CO2, H, H2O

Years Data Collected: 2008 - Present

Years Data Available: 2015 - 2017 DOIs to use for Citation of Data

Description: The vegetation is Mediterranean-climate closed shrubland on sandy soils. E
measurements began in 2008, 20 years after the last wildfire. The site ...
See More

URL: —

Research Topics: 1) Comparison of NEEef and NPPmod17a. 2) Comparison of GPP ef (Reco fid
2005) and GPPmod17a. 3) Parameterize and elucidate mechanisms ...
See More

Acknowledgment: —

Site Tasks

Add Image | Add Publication | Download Data | Add to Site Set

Data Processing Status

Overview | Windroses | DOI | Data Use Log | Image Gallery | MODIS | Publications | BADM

DOIs for this site and other citation information

Citations: For data, use the DOI citation. For site characterization, use the site publication. For funding, use acknowledgments.

DOIs to use for Citation of Data

- **AmeriFlux**

  Citation: Alejandro Cueva, Eulogio López-Reyes, Stephen H. Bullock (2008-) AmeriFlux MX-EMg El Mogor, Dataset. https://doi.org/10.17190/AMF/1717849
  Link: https://doi.org/10.17190/AMF/1717849

Publication(s) to use for citations of site characterization

—

Ack

Res

Overview | Windroses | DOI | Data Use Log | Image Gallery | MODIS | Publications | BADM

This page displays the list of downloads of data for the site MX-EMg.

NOTE: Version refers to the version of the AmeriFlux BASE-BADM product for the site was downloaded by the user and the download count indicates the number of times the person downloaded that version.

Export to Excel | Export to CSV

Year Range Start Year -

Search

Showing 1 to 10 of 15 results

Products ○ All ◉ BASE

Site Team View

First < 1 > Last

Items Per Page: 10 | 25 | 50 | View All

Date	Name	Product	Version	Intended Use	Intended Use Description	Download Count
2020-12-03	Yating Gu	BASE	1-5	Research - Remote sensing	To study phenology mechanism	1
2020-12-03	Antoine Cabon	BASE	1-5	Research - Multi-site synthesis	Multisite comparison of tree ring width and GPP	1
2020-12-01	Pengtao Wang	BASE	1-5	Education (Teacher or Student)	To explore the role of wetland	2
2020-12-01	Zhang Zhen	BASE	1-5	Research - Remote sensing		1
2020-12-01	Li Manqing	BASE	1-5	Research - Other	IAV of global land carbon sink	2

Data users must follow AmeriFlux Data Policy

https://ameriflux.lbl.gov/data/data-policy/

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Data Policy

AmeriFlux Data Use Policy

The AmeriFlux Network data offered on this website are contributed by indivic
their data openly with the global community.

The AmeriFlux policy is that all data should be properly acknowledged, and th
opportunity to make an intellectual contribution to the papers that use their da
opportunity to be a co-author.

When you use AmeriFlux data

- When you download the data, use the Data-Download form to describe how you plan to use the data and if you plan to use in publications. This statement is sent to the data contributor(s), and then posted to the AmeriFlux Data Download Log.
- When you start in-depth analysis that may result in a publication, contact the data contributors directly, so that they have the opportunity to contribute substantively and become a co-author.

Acknowledge AmeriFlux data in publications—

- Cite the relevant DOI and/or recommended paper(s). Each site's DOI is listed on its Site General Info page, DOI tab. (See Sites Search.)
- Acknowledge funding for site support. If the data download did not provide the preferred

Proposal to move to CC-By-4.0

More details in Nov 16, 2020 Webinar

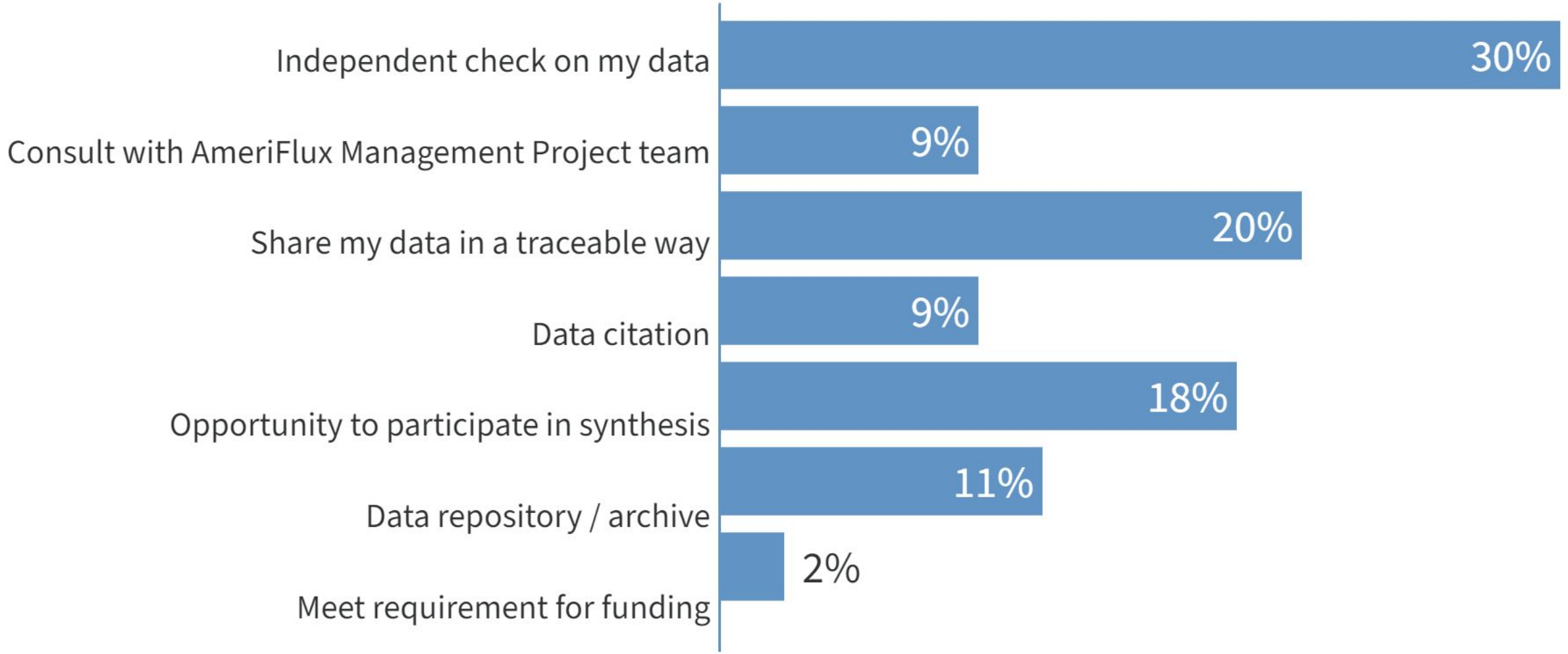
DOI Authorship form and data policy

Links to presentation and video:

https://ameriflux.lbl.gov/community/amp-webinar-series/

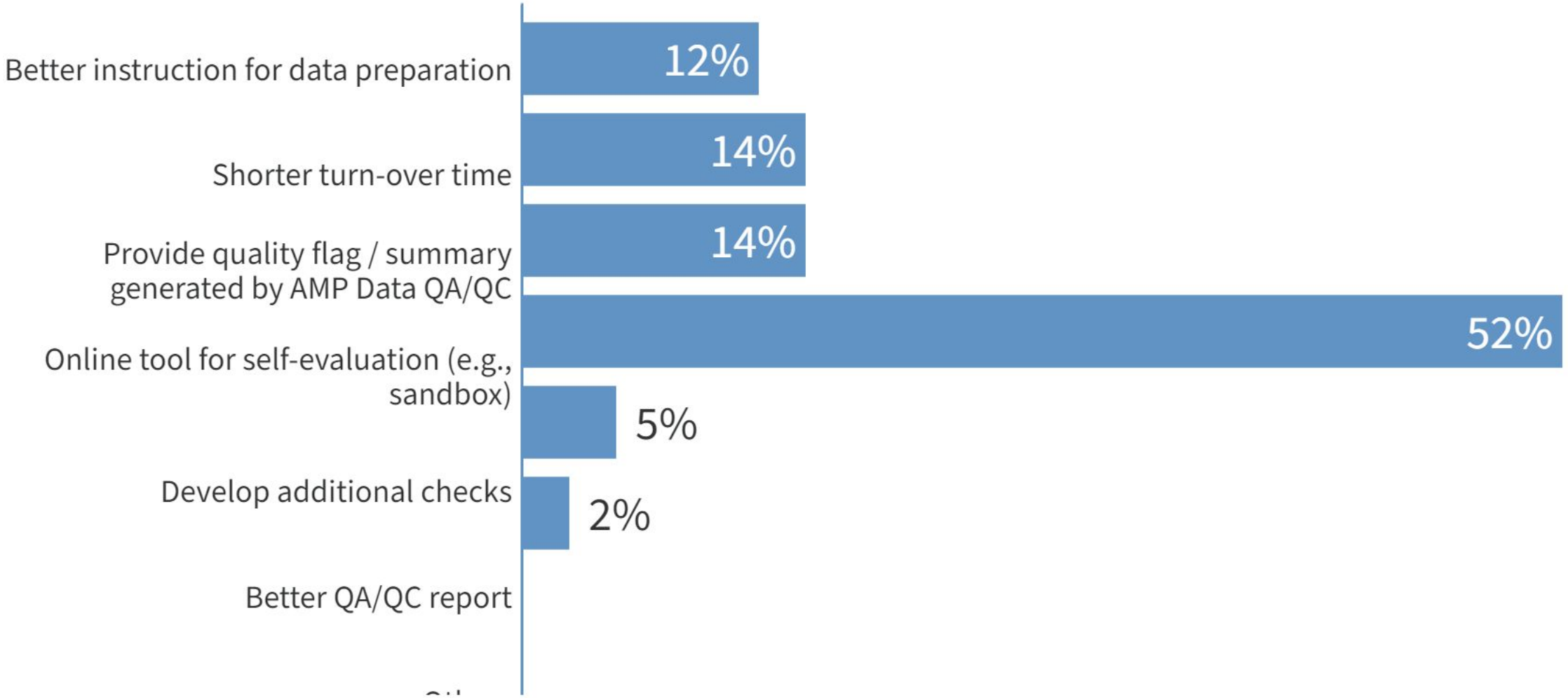
Poll locked. Responses not accepted.

Whether you submitted data before or not, select the two most valuable aspects for you of the BASE QA/QC Pipeline



Poll locked. Responses not accepted.

Where do you think the BASE QA/QC pipeline can be improved? (top two priority)



We welcome questions / feedback

ameriflux-support@lbl.gov

AMERIFLUX
MANAGEMENT PROJECT

Related links

- https://ameriflux.lbl.gov/data/data-processing-pipelines/
- https://ameriflux.lbl.gov/site/data-processing-status
- https://ameriflux.lbl.gov/data/upload-data/
- https://ameriflux.lbl.gov/half-hourly-hourly-data-upload-format/
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