

NOAA Contacts

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Roshydromet Contacts

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Datagrams: Tiksi ghg_flux

Location: Clean Air Facility
 File name: YYYYMMDDHHMM_tiksi_flux.RAW (as of 02/12/14)
 File location in Tiksi:

UTC time [hhmmss.t]	Wind Speed U Direction [cm s-1]	Wind Speed V Direction [cm s-1]	Wind Speed W Direction [cm s-1]	Sonic Temperature [degC]	CO2 Concentration [ppm]	H2O Concentration [mmol mol-1]	Licor Temperature [degC]	Licor Pressure [kPa]	CH4 Concentration [ppm]	LosGatos Cell Pressure [kPa]	LosGatos Cell Temperature [degC]	LosGatos Ring Down Time [us]
13000.02	-96	17	7	-3274	181.02	1.222	18.72	88.04	-999	-999	-999	-999
13000.11	-101	-6	-8	-3269	181.11	1.225	18.72	88.04	-999	-999	-999	-999
13000.22	-104	-3	-3	-3278	181.14	1.227	18.71	88.04	-999	-999	-999	-999

Data Diagnostics Logger Info

Instruments:

1. Metek USA-100 Sonic Anemometer
2. Licor Li-7000
3. Los Gatos Research RMT-200



Facility / Platform:

Clean Air Facility / Finnish Cabin (photo below)



Tiksi Data Center

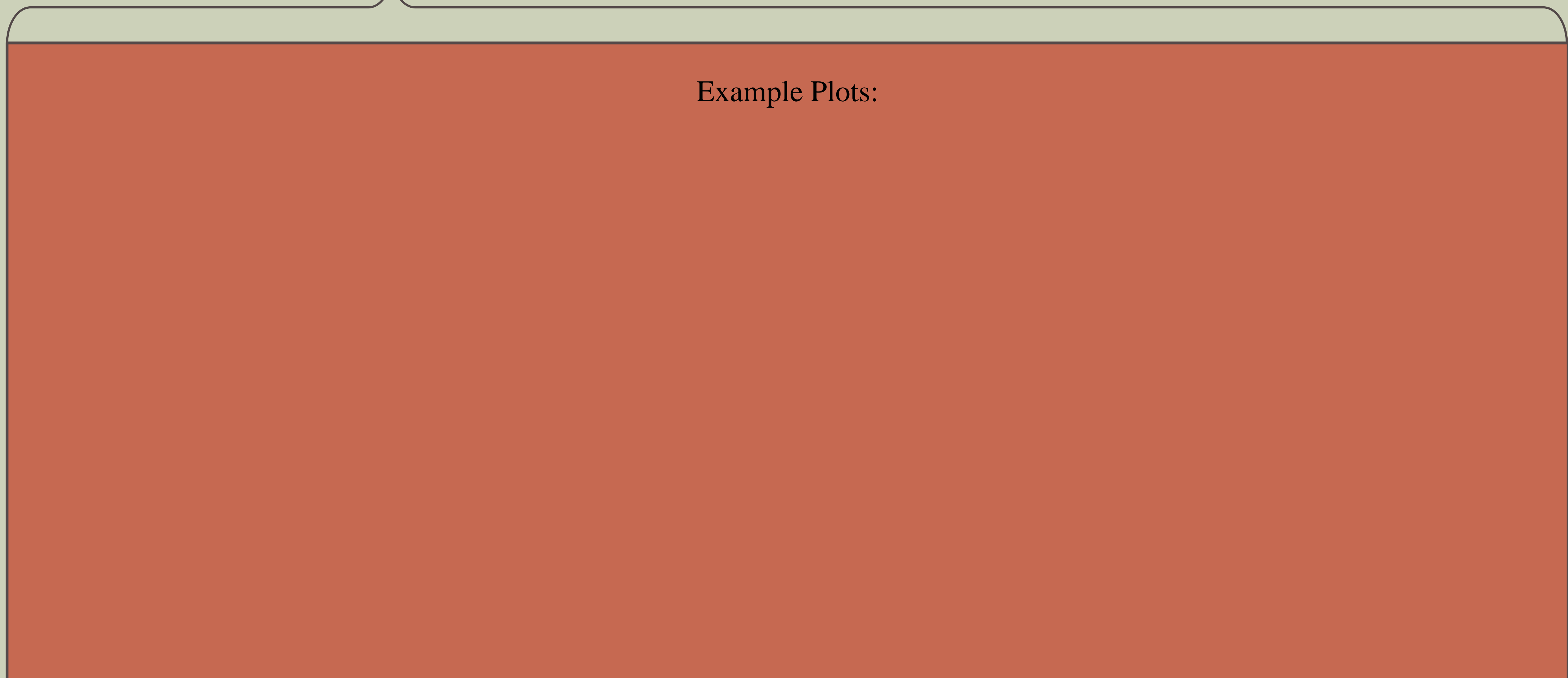
NOAA

Processing

Quicklooks

FTP File locations at NOAA:
 From Tiksi Data Center to:
[/home/aari/GHG_FLUX/Incoming/raw/](#)
 Then transferred to:
[/storage/archive/tiksi/greenhouse_gas/ghg_flux/raw/YYYY/](#)

See Attached Page for Detailed Processing Monthly File



Modify Data Format:
 1. Include header information
 2. Include Day-Fraction (time)
 3. Standardize file naming convention

Ingest

Folder Name	File Name	FTP Location
Raw	YYYYMMDDHHMM_tiksi_flux.RAW	ftp://ftp.etl.noaa.gov/psd3/arctic/tiksi/greenhouse_gas/ghg_flux/raw/YYYY/
Ingest	tiksi_flux_YYYYMM.csv	ftp://ftp.etl.noaa.gov/psd3/arctic/tiksi/greenhouse_gas/ghg_flux/ingest/monthly_files/YYYY/
Products		ftp://ftp.etl.noaa.gov/psd3/arctic/tiksi/greenhouse_gas/ghg_flux/products/YYYY/
Quicklooks		ftp://ftp.etl.noaa.gov/psd3/arctic/tiksi/greenhouse_gas/ghg_flux/quicklooks/YYYY/
Example:		ftp://ftp.etl.noaa.gov/psd3/arctic/tiksi/greenhouse_gas/ghg_flux/products/YYYY/

Standardized Data Format:
 Definitions:
 sss - site identifier (e.g., tik)
 inst - base instrument abbreviation
 Fn - facility abbreviation (e.g., caf[0:1], cow[0:1], twr[0:1])
 data qualifier – daily or monthly
 data processing level - raw=c1, ingest=c2, products=c3

Product

See Attached Page for Detailed Product Monthly File

Home:
<http://www.esrl.noaa.gov/psd/iasoa/>
Data:
<http://www.esrl.noaa.gov/psd/iasoa/dataataglance>

IASOA Portal

FMI Data Server

Home:
<http://en.ilmatieteenlaitos.fi/>
Data:
<ftp://ftp.fmi.fi/>

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Datagrams: Tiksi ghg_flux

Processing

Product

1. Metek USA-100 Sonic Anemometer
2. Licor Li-7000
3. Los Gatos Research RMT-200

Derived Variables in .csv files: Color coding dependent on instrument

Parameter	Column #	Product Variable Name [units]
Period end date and time in UTC	1	yyyy-mm-dd hh:mm [UTC]
Average wind direction	2	wind dir [degrees]
Average wind speed	3	wind speed [m/s]
Friction velocity	4	friction velocity [m/s]
Average wind u component velocity	5	avg(u) [m/s]
Average wind v component velocity	6	avg(v) [m/s]
Average wind w component velocity	7	avg(w) [m/s]
Average sonic temperature	8	avg(Ts) [C]
Average CO2 concentration	9	avg(CO2) [ppm]
Average H2O concentration	10	avg(H2O) [mmol mol-1]
Average Licor cell temperature	11	avg(Lit) [C]
Average Licor cell pressure	12	avg(LiP) [kPa]
Average CH4 concentration	13	avg(CH4) [ppm]
Average LosGatos cell pressure	14	avg(CH4p) [torr]
Average LosGatos cell temperature	15	avg(CH4t) [C]
Average LosGatos ring down time	16	avg(CH4mt) [us]
CO2 mass mixing ratio, dry air	17	avg(s) [ug(CO2)g-1(dry air)]
H2O mass mixing ratio, dry air	18	avg(q) [mg(CO2)g-1(dry air)]
CO2 mass mixing ratio, moist air	19	avg(S) [ug(CO2) g-1 (moist air)]
H2O mass mixing ratio, moist air	20	avg(Q) [mg (H2O) g-1 (moist air)]
Average wind component u variance	21	<u'u> [m2 s-2]
Average wind component v variance	22	<v'v> [m2 s-2]
Average wind component w variance	23	<w'w> [m2 s-2]
Average sonic temperature variance	24	<Ts'Ts> [K2]
Average CO2 concentration variance	25	<CO2'CO2> [ppm2]
Average H2 concentration variance	26	<H2O'H2O> [umol2 mol-2]
Average Licor cell temperature variance	27	<Lit'Lit> [K2]
Average Licor cell pressure variance	28	<LiP'LiP> [kPa2]
Average CH4 concentration variance	29	<CH4'CH4> [ppm2]
Average LosGatos cell pressure variance	30	<CH4p'CH4p> [kPa2]
Average LosGatos cell temperature variance	31	<CH4t'CH4t> [K2]
Average LosGatos ring down time variance	32	<CH4mt'CH4mt> [us2]
Average s variance	33	<s's> [ug2 g-2]
Average q variance	34	<q'q> [mg2 g-2]
Average S variance	35	<S'S> [ug2 g-2]
Average Q variance	36	<Q'Q> [mg2 g-2]
Wind w and sonic T covariance	37	w'Ts' [K m s-1]
Wind w and CO2 concentration covariance	38	w'CO2' [ppm m s-1]
Wind w and H2O concentration covariance	39	w'H2O' [ppm m s-1]
Wind w and Licor temperature covariance	40	w'Lit' [K m s-1]
Wind w and Licor pressure covariance	41	w'LiP' [kPa m s-1]
Wind w and CH4 concentration covariance	42	w'CH4' [ppm m s-1]
Wind w and LosGatos pressure covariance	43	w'CH4p' [torr m s-1]
Wind w and LosGatos temperature covariance	44	w'CH4t' [K m s-1]
Wind w and LosGatos ringdown time covariance	45	w'CH4mt' [us m s-1]
Wind w and s covariance	46	w's' [ug g-1 m s-1]
Wind w and q covariance	47	w'q' [mg g-1 m s-1]
Wind w and S covariance	48	w'S' [ug g-1 m s-1]
Wind w and Q covariance	49	w'Q' [mg g-1 m s-1]
Number of data records (lines)	50	# data rec
Number of filtered data records	51	# filt. data rec
Lag for u component	52	lag(u)
Lag for v component	53	lag(v)
Lag for w component	54	lag(w)
Lag for T component	55	lag(Ts)

Derived Variables in .csv files: Color coding dependent on instrument

Parameter	Column #	Product Variable Name [units]
Lag for CO2	56	lag(CO2)
Lag for H2O	57	lag(H2O)
Lag for Licor temperature (always 0)	58	lag(Lit)
Lag for Licor pressure (always 0)	59	lag(LiP)
Lag for CH4	60	lag(CH4)
Lag for LosGatos pressure (always 0)	61	lag(CH4p)
Lag for LosGatos temperature (always 0)	62	lag(CH4t)
Lag for LosGatos ringdown time (always 0)	63	lag(CH4mt)
Lag for s (always 0)	64	lag(s)
Lag for q (always 0)	65	lag(q)
Lag for S (always 0)	66	lag(S)
Lag for Q (always 0)	67	lag(Q)
Average temperature of air	68	<Ta>-To [C]
Density of air	69	<density>/1000 [kg m-3]
CO2 mass flux density	70	Fs/1000 [mg m-2 s-1]
CO2 mole flux density	71	Fs/Mc [umol m-2 s-1]
Density correction of CO2 flux	72	dFs/1000 [mg m-2 s-1]
H2O mass flux density	73	Fq/1000 [g m-2 s-1]
h2O mole flux density	74	Fq/Mw [mmol m-2 s-1]
Evaporation flux	75	3600*Fq/1e6 [mm h-1]
Density correction of H2O flux	76	dFq/1000 [g m-2 s-1]
Latent heat flux	77	FL [W m-2]
Webb corrected CO2 flux	78	FSW [mg m-2 s-1]
Webb corrected H2O flux	79	FQW [mg m-2 s-1]
Vapor pressure deficit	80	VPD/100 [hPa]
Relative humidity	81	100*RH [%]
Buoyancy flux	82	B [K m s-1]
Sensible heat flux	83	FH [W m-2]
Momentum flux	84	FM [N m-2]
Inverse Obukhov length	85	L-1 [m-1]
Friction velocity 2	86	ustar2 [m s-1]
Minimum CO2 concentration	87	min(CO2) [ppm]
Maximum CO2 concentration	88	max(CO2) [ppm]
CO2 average (last 30s) – average (first 30s)	89	CO2 avg(last 30s)-avg(first 30s) [ppm]
Rotation angle 1	90	phi
Rotation angle 2	91	psi
u* stationarity	92	(5minmean-halfh)/halfh (u*)
mod u* stationarity	93	abs(dev(5minmean)/halfh) (u*)
Sensible heat flux stationarity	94	(5minmean-halfh)/halfh (w'Ts')
mod sensible heat flux stationarity	95	abs(dev(5minmean)/halfh) (w'Ts')
CO2 flux stationarity	96	(5minmean-halfh)/halfh (w'CO2')
mod CO2 flux stationarity	97	abs(dev(5minmean)/halfh) (w'CO2')
H2O flux stationarity	98	(5minmean-halfh)/halfh (w'H2O')
mod H2O flux stationarity	99	abs(dev(5minmean)/halfh) (w'H2O')
CH4 flux stationarity	100	(5minmean-halfh)/halfh (w'CH4')
mod CH4 flux stationarity	101	abs(dev(5minmean)/halfh) (w'CH4')
CH4 flux stationarity	102	(5minmean-halfh)/halfh (w'CH4p')
mod CH4p flux stationarity	103	abs(dev(5minmean)/halfh) (w'CH4p')
CH4t flux stationarity	104	(5minmean-halfh)/halfh (w'CH4t')
mod CH4t flux stationarity	105	abs(dev(5minmean)/halfh) (w'CH4t')
CH4mt flux stationarity	106	(5minmean-halfh)/halfh (w'CH4mt')
mod CH4mt flux stationarity	107	abs(dev(5minmean)/halfh) (w'CH4mt')
Lag-average for CO2	108	lagq(CO2)
Lag-average for H2O	109	lag(H2O)
Lag-average for CH4	110	lag(CH4)