Harvard Forest Data Archive HF233-01

Data File:

Name = hf233-01-eddy-flux.csv
Description = eddy flux data
Rows = 59123 Columns = 48
MD5 checksum = 7c2f4cbfa7bc8d0279253f29769a3685

Variables:

date = date
year = year
half.hour = half-hour of day (nominalHalfHour)
doy = day of year (nominalDay)
fc = net CO2 flux (milligramPerMeterSquaredPerSecond)
le = latent heat flux (wattPerMeterSquared)
h = sensible heat flux (wattPerMeterSquared)
g = ground heat flux (wattPerMeterSquared)
rn = net radiation (wattPerMeterSquared)
sw.in = incoming shortwave radiation (wattPerMeterSquared)
sw.out = outgoing shortwave radiation (wattPerMeterSquared)
lw.net = net longwave radiation (wattPerMeterSquared)
par = photosynthetically active radiation
   (micromolePerMeterSquaredPerSecond)
tair = air temperature at 2m above surface (celsius)
vpd = vapor pressure deficit (kilopascal)
press = atmospheric pressure (millibar)
rh = relative humidity (dimensionless)
co2 = atmospheric co2 concentration (micromoles co2 per mole
 air)
   (dimensionless)
q = specific humidity (g h2o per kg air) (dimensionless)
ustar = friction velocity (metersPerSecond)
u = horizontal wind speed (metersPerSecond)
wdir = wind direction (degree)
stability = atmospheric stability parameter (z/L) (dimensionless)
rain = rainfall (millimeterPerHalfHour)
vwc1 = ten cm deep, SW trench (% by volume) (dimensionless)
vwc2 = five cm deep, SE trench (% by volume) (dimensionless)
vwc3 = ten cm deep, SE trench (% by volume) (dimensionless)
vwc4 = twenty-five cm deep, SE trench (% by volume) (dimensionless)
vwc5 = fifty cm deep, SE trench (% by volume) (dimensionless)
vwc6 = ninety-four cm deep, SE trench (% by volume) (dimensionless)
vwc7 = twenty cm deep, NE trench (% by volume) (dimensionless)
vwc8 = eighty cm deep, NE trench (% by volume) (dimensionless)
vwc9 = not working, was between s20ne and s80ne (% by
 volume)
   (dimensionless)
soil.wat1 = total soil water profile 1 (in a roughly 1 m deep soil

   column) (centimeter)
soil.wat2 = total soil water profile 2 (in a roughly 1 m deep soil

   column) (centimeter)

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tsoil1 = soil temperature from profile 1 at 5 cm (celsius)
tsoil2 = soil temperature from profile 2 at 5 cm (celsius)
precip = precipitation from the Fisher Met Station heated
 gauge
   (millimeterPerHalfHour)
gep = gross ecosystem productivity, R05 method (mg CO2 m−2
 s−1)
   (milligramPerMeterSquaredPerSecond)
reco = ecosystem respiration, R05 method (mg CO2 m−2
 s−1)
   (milligramPerMeterSquaredPerSecond)
le.fill = latent heat flux gap filled with marginal distribution

   sampling (wattPerMeterSquared)
h.fill = sensible heat flux gap filled with marginal distribution

   sampling (wattPerMeterSquared)
fc.fill = net co2 flux gap filled with marginal distribution
   sampling (mg CO2
 m−2 s−1) (milligramPerMeterSquaredPerSecond)
gep.fill = gep R05, gap filled with marginal distribution sampling
   (mg CO2 m−2
 s−1) (milligramPerMeterSquaredPerSecond)
reco.fill = reco R05, gap filled with marginal distribution sampling
   (mg CO2 m−2
 s−1) (milligramPerMeterSquaredPerSecond)
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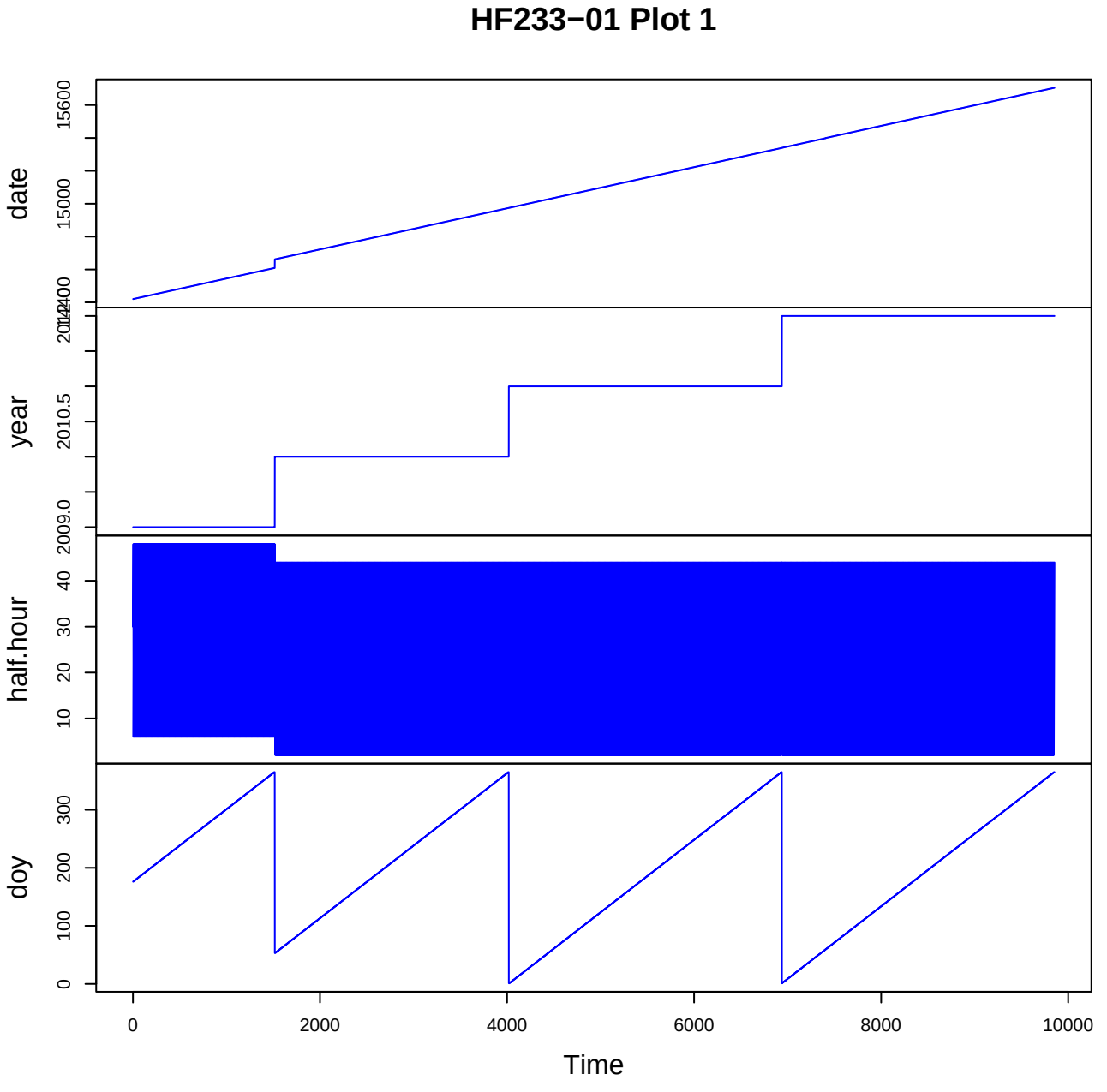
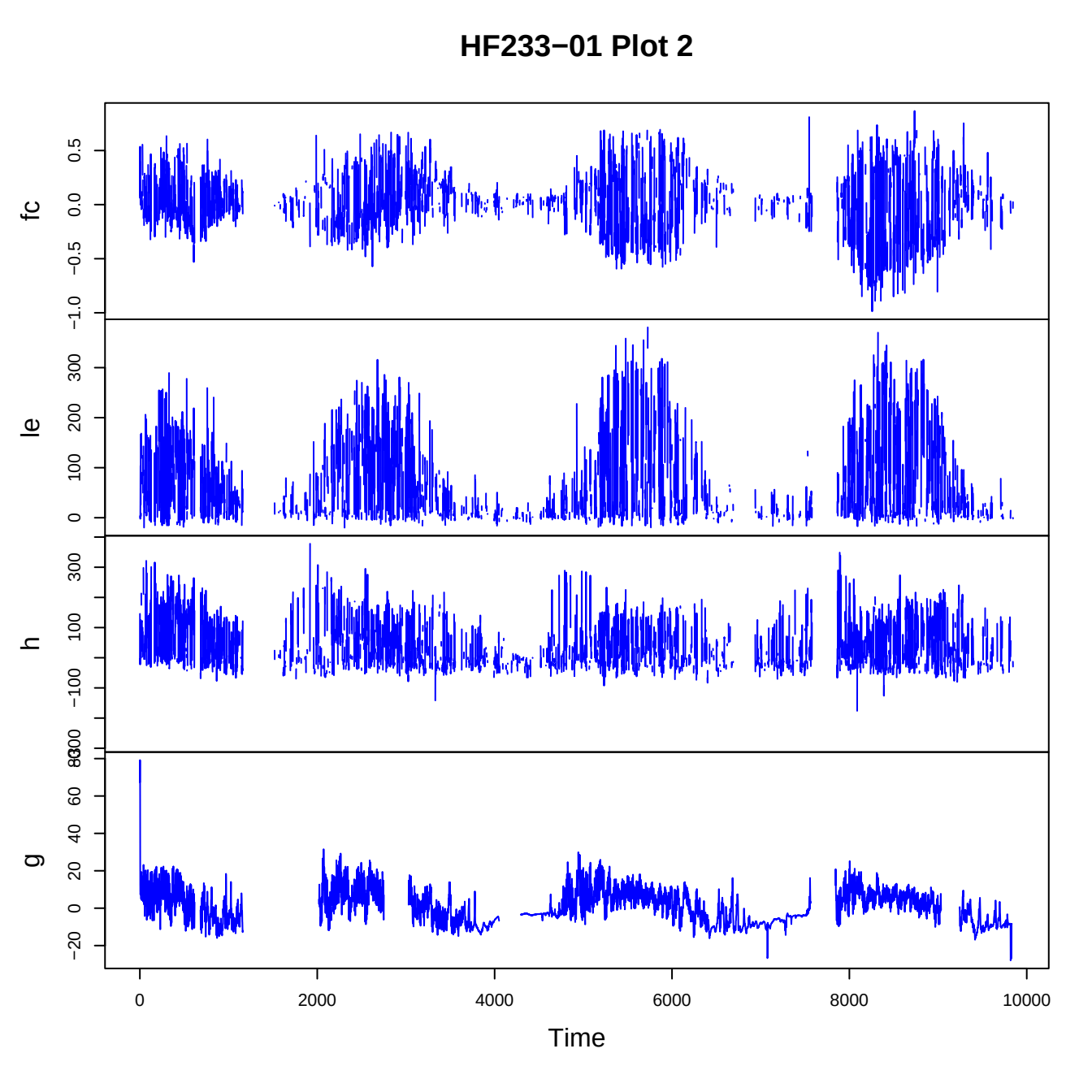
Variable	Min	Median	Mean	Max	NAs
date	2009-06-25	2011-04-24	2011-04-16	2012-12-31	0
year	2009.000	2011.000	2010.734	2012.000	0
half.hour	1.000	25.000	24.512	48.000	0
doy	1.000	212.000	203.199	365.000	0
fc	-1.000	0.050	0.043	0.896	39509
le	-19.986	27.915	63.265	438.930	39256
h	-286.170	1.655	29.505	425.870	35365
g	-27.957	-0.356	0.427	79.699	11788
rn	-115.960	-0.662	79.719	1121.300	4
sw.in	-1.000	5.021	153.191	1017.000	5
sw.out	-0.987	3.410	34.191	483.200	2160
lw.net	-179.050	-45.731	-44.609	24.273	3022
par	0.000	9.920	299.463	2137.000	0
tair	-25.189	11.731	11.110	35.304	1192
vpd	-0.116	0.167	0.338	3.777	2973
press	926.470	966.370	966.091	989.070	2471
rh	0.092	0.815	0.782	1.058	2866
co2	340.030	394.950	394.337	459.670	3362
q	0.409	6.073	6.617	17.530	2973
ustar	0.000	0.198	0.210	4.099	24139
u	0.000	1.434	1.571	7.609	1910
wdir	0.000	246.890	232.309	359.990	6903
stability	-14187.000	0.012	10.812	103000.000	24139
rain	0.000	0.000	0.023	11.500	346
vwc1	0.124	0.289	0.277	0.427	11788
vwc2	0.125	0.325	0.315	0.488	13076
vwc3	0.000	0.146	0.137	0.344	347
vwc4	0.000	0.167	0.161	0.446	346
vwc5	0.000	0.213	0.202	0.504	346
vwc6	0.000	0.210	0.203	0.387	346
vwc7	0.000	0.201	0.198	0.315	346
vwc8	0.000	0.261	0.248	0.363	346
vwc9	0.000	0.229	0.220	0.346	346
soil.wat1	6.810	17.889	17.090	40.798	528
soil.wat2	8.551	19.840	18.915	28.410	12133
tsoil1	-5.465	10.584	10.289	23.841	796
tsoil2	-1.528	12.334	10.804	26.067	11788
precip	0.000	0.000	0.073	30.700	0
gep	-0.484	0.150	0.265	1.726	39922
reco	0.001	0.313	0.307	1.133	39709
le.fill	-19.986	13.133	41.027	438.930	3677
h.fill	-286.170	-7.580	17.723	425.870	3677
fc.fill	-1.000	0.066	0.075	0.896	3677
gep.fill	-0.484	0.044	0.166	1.726	4166
reco.fill	0.001	0.221	0.242	1.133	4181


HF233−01 Plot 1
date
15600
15000
year
2010.5
2009.0
half.hour
40
30
20
10
doy
300
200
100
0
0
2000
4000
6000
8000
10000
Time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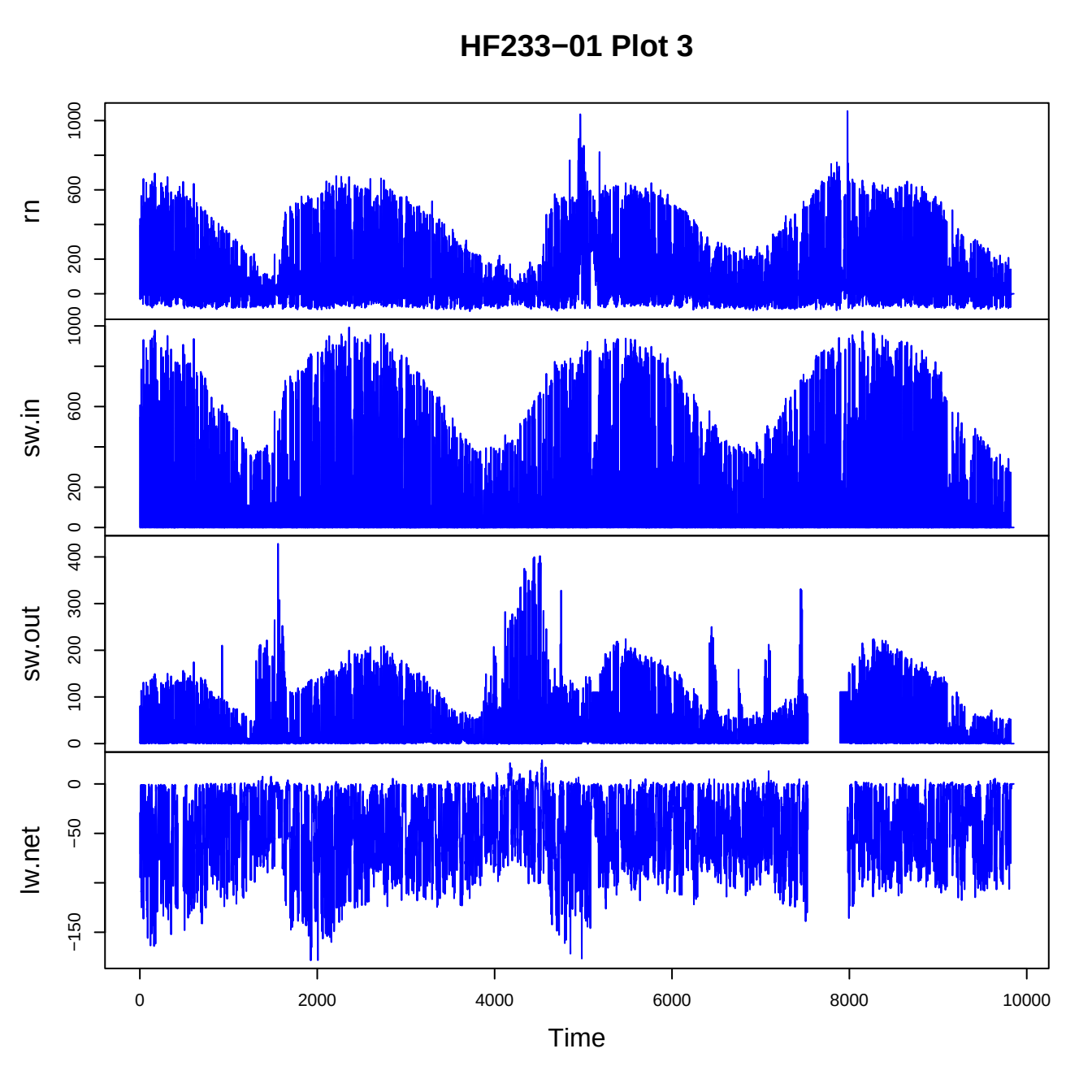
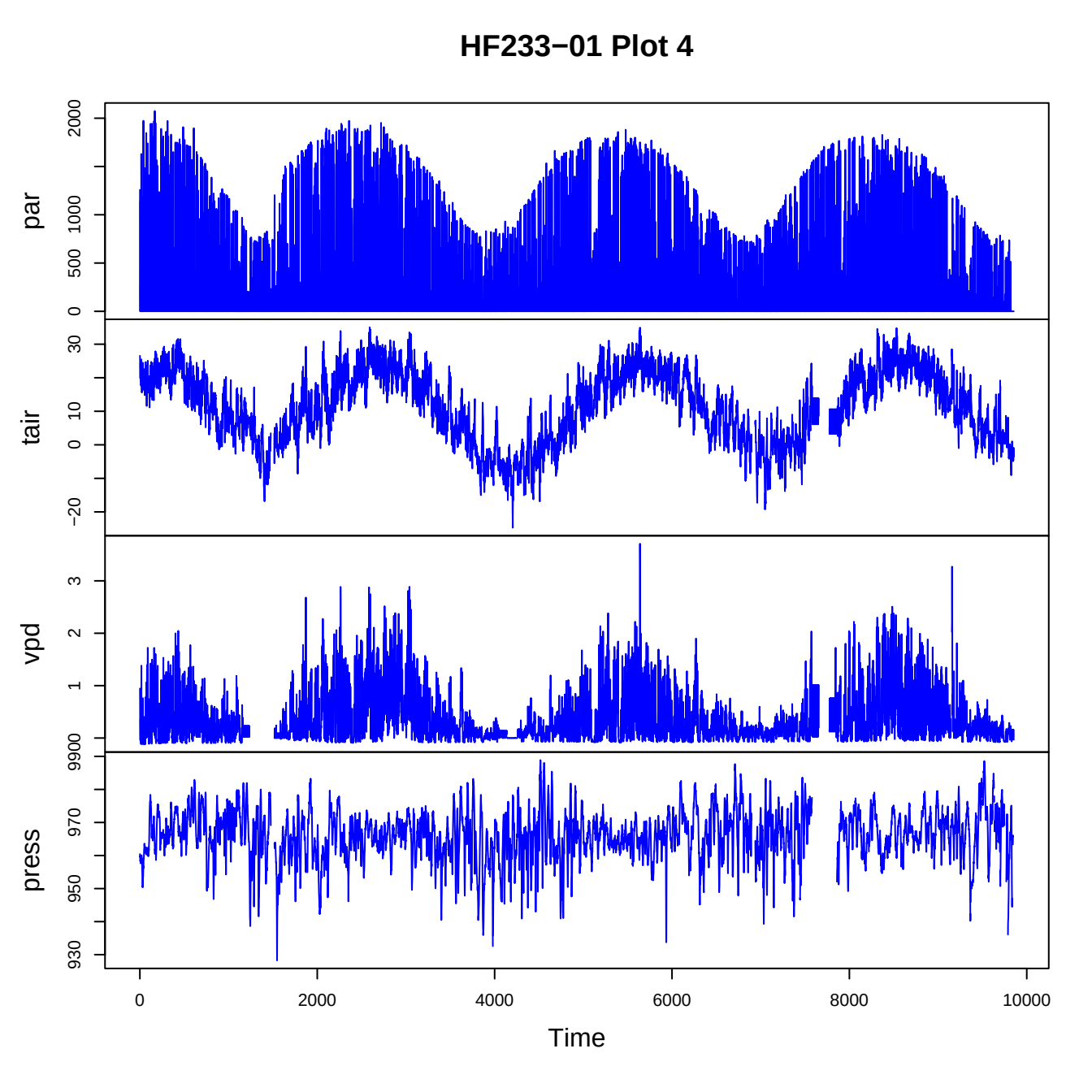
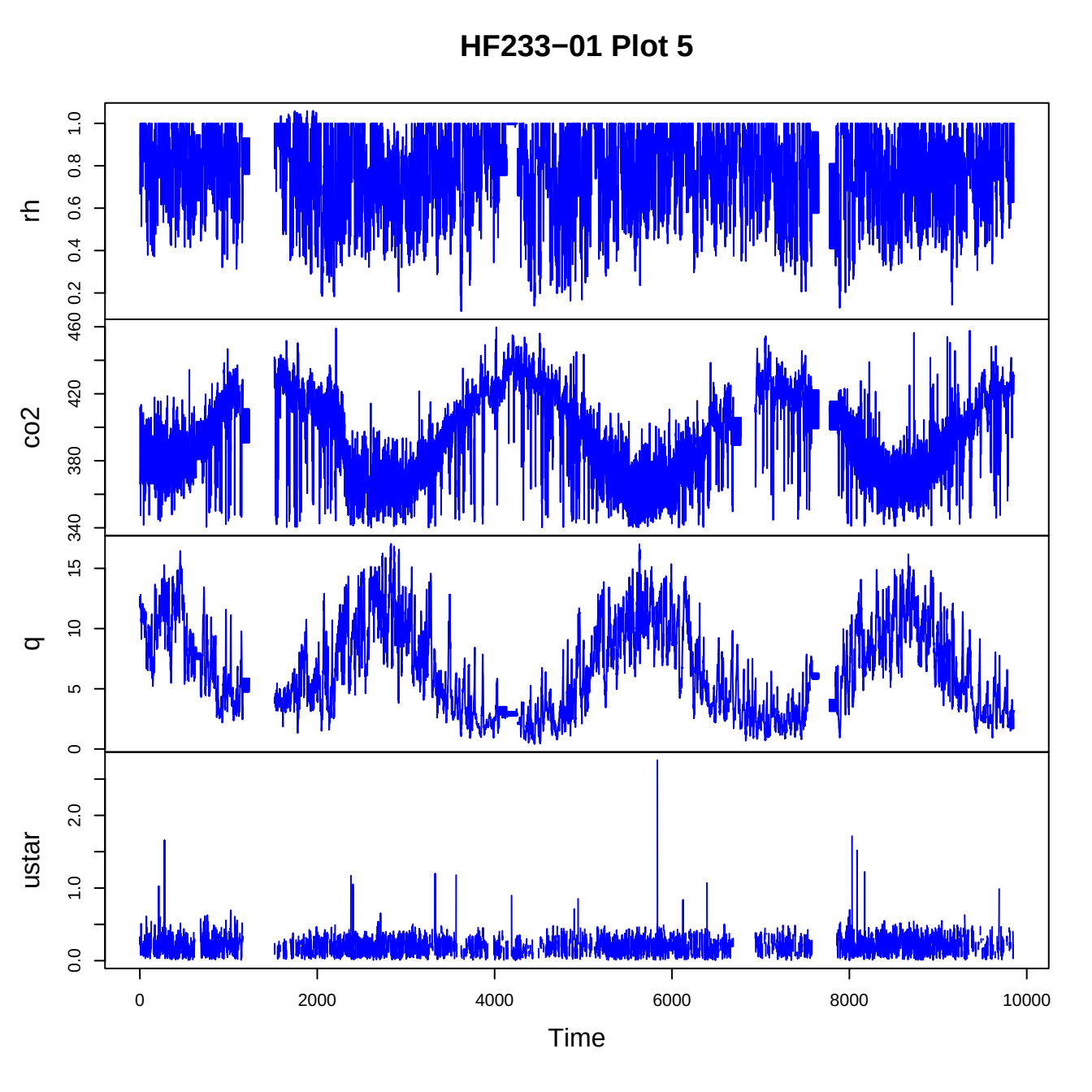
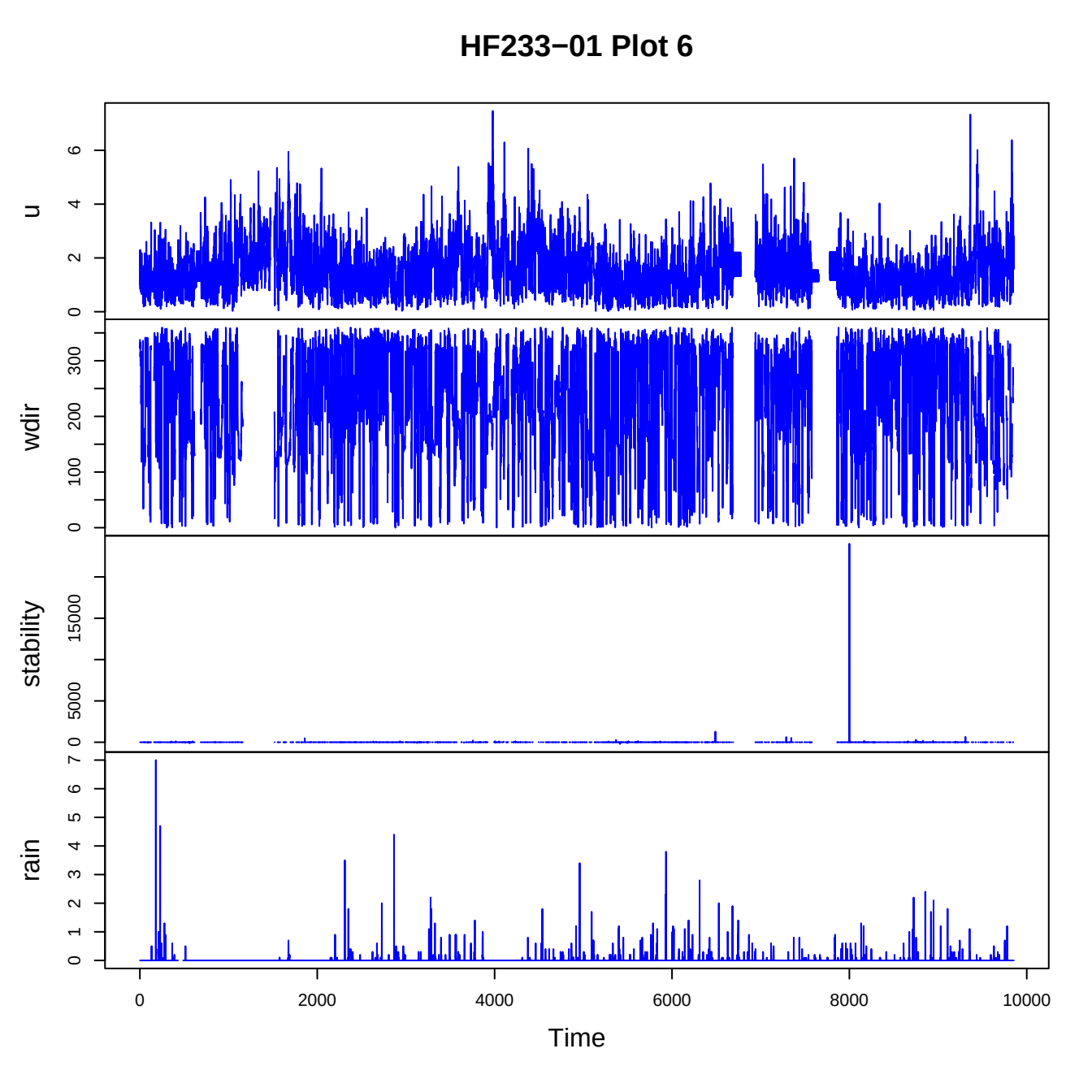
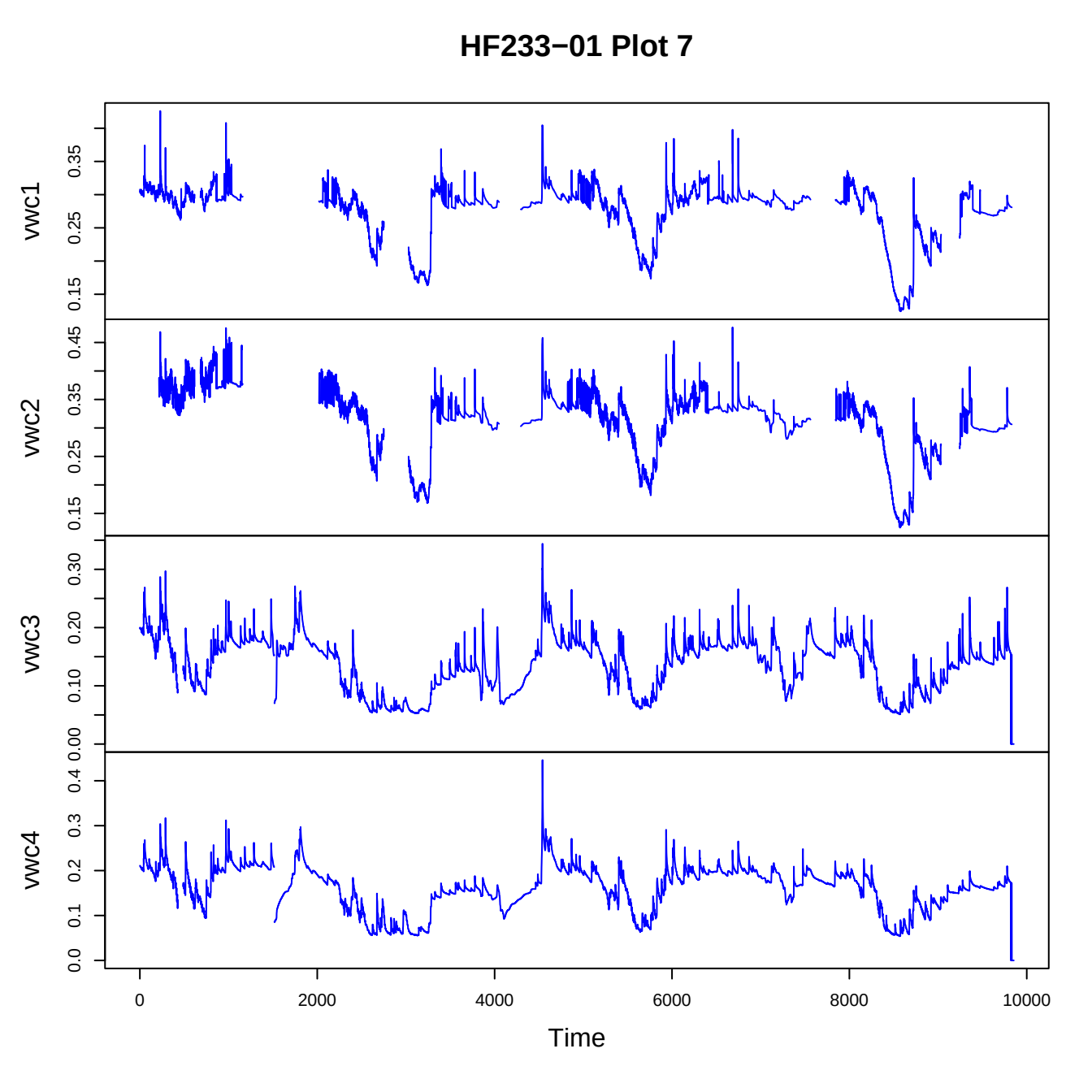
fc
le
h
g
Time
0
2000
4000
6000
8000
10000

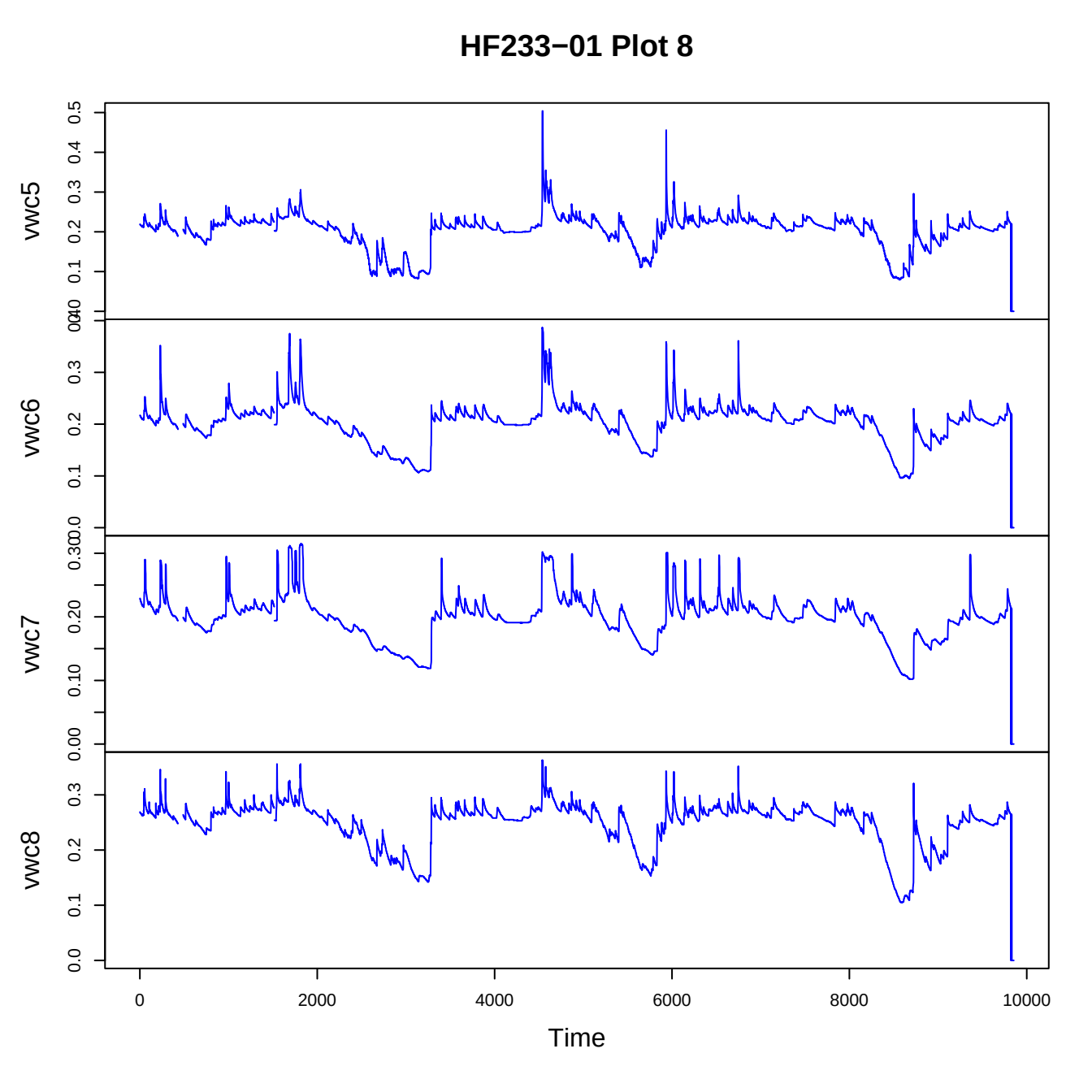

HF233−01 Plot 3
rn
sw.in
sw.out
lw.net
0
200
600
1000
0
100
200
300
400
−150
−50
0
0
2000
4000
6000
8000
10000
Time

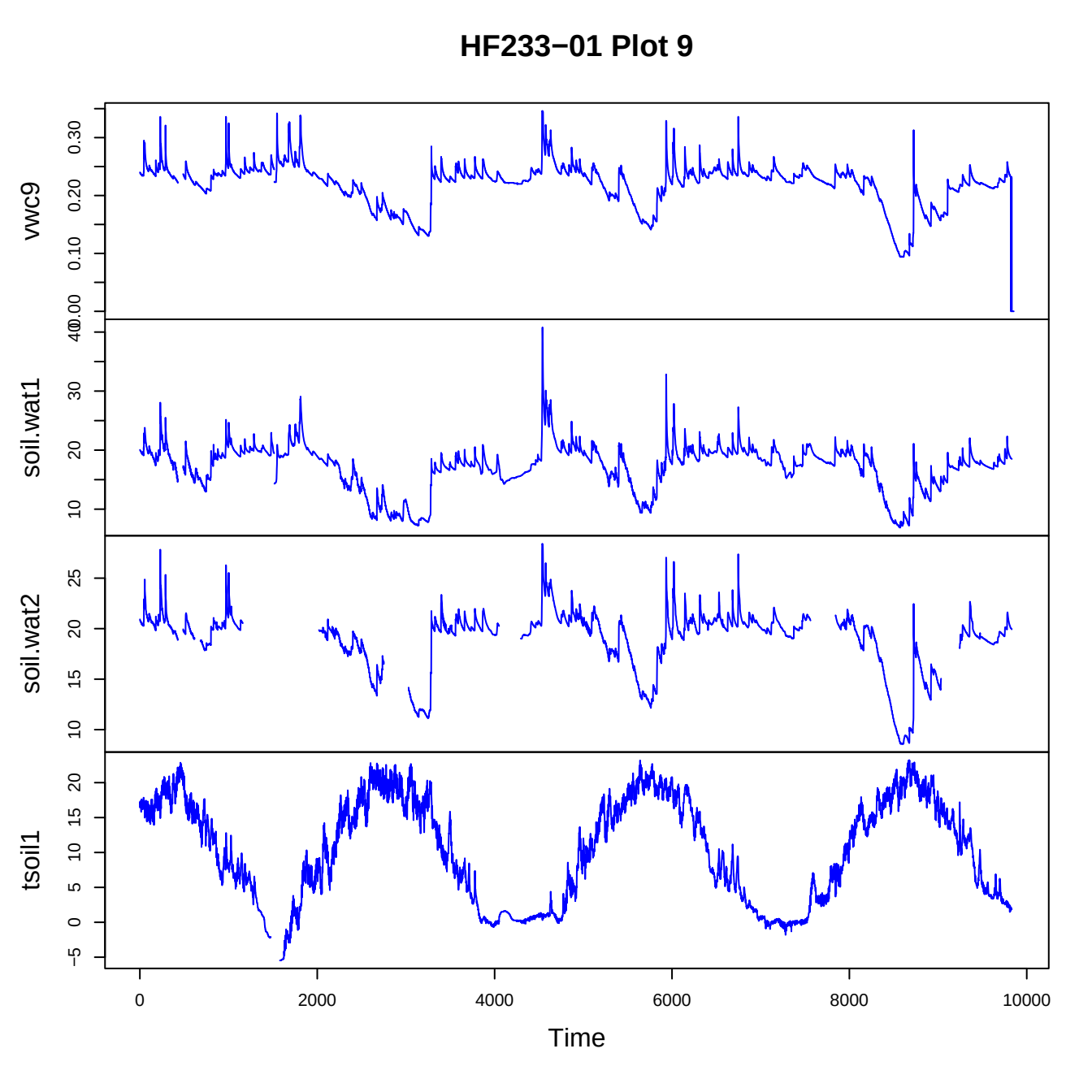

HF233−01 Plot 4
par
tair
vpd
press
Time
0
2000
4000
6000
8000
10000

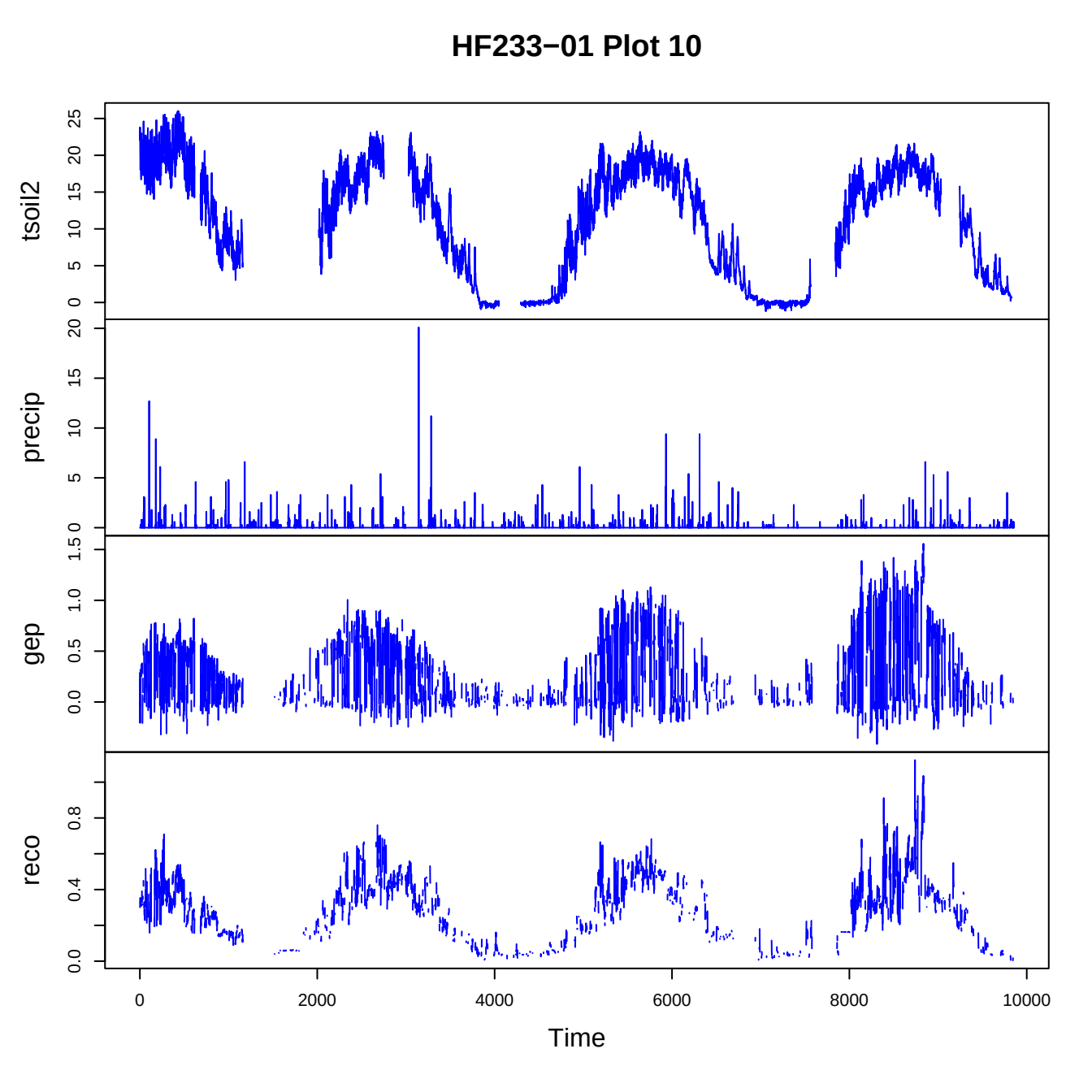

HF233−01 Plot 5
rh
co2
q
ustar
Time
0
2000
4000
6000
8000
10000
0.2
0.4
0.6
0.8
1.0
340
380
420
460
0
5
10
15
0.0
1.0
2.0

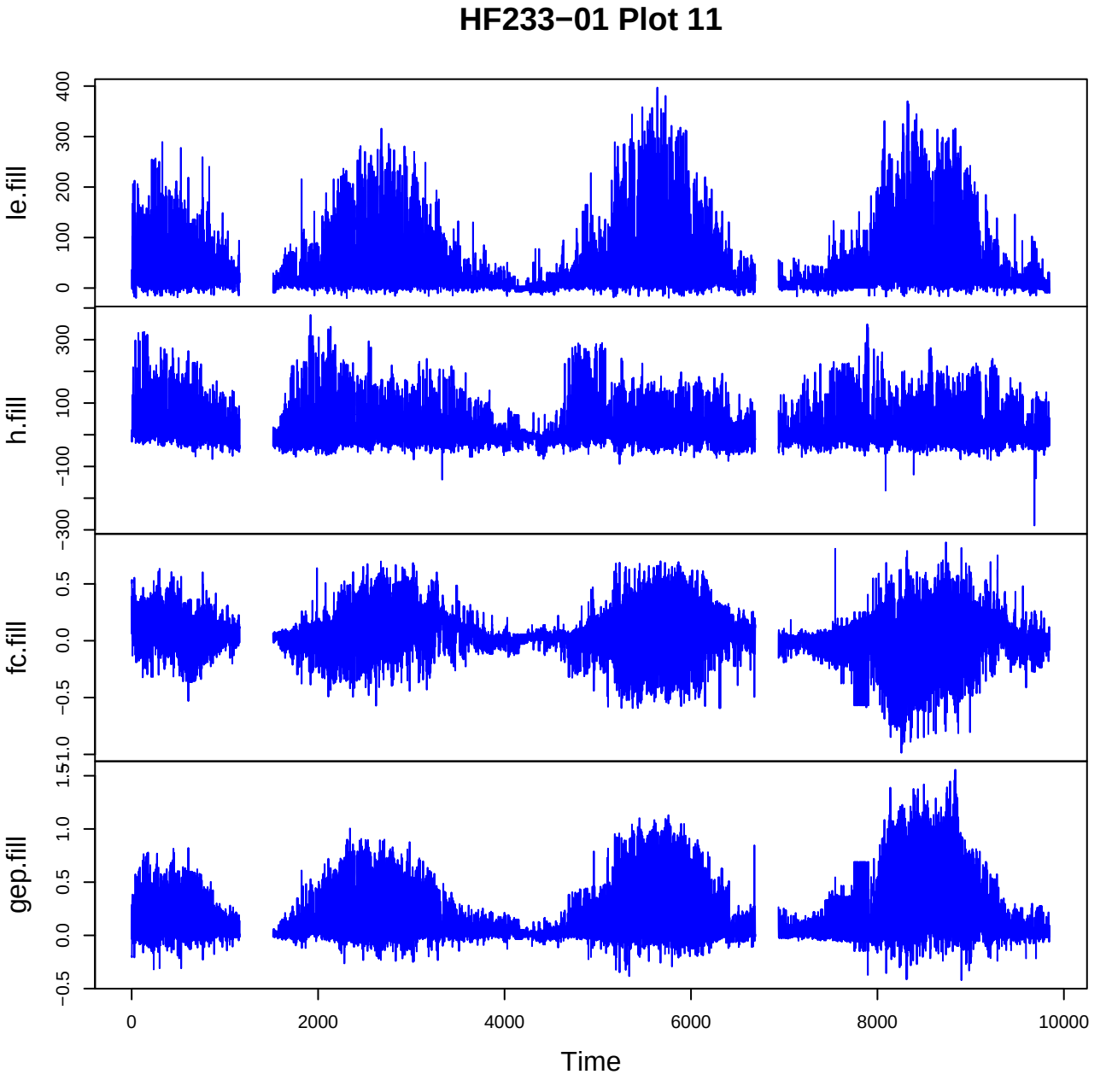

HF233−01 Plot 6
u
wdir
stability
rain
Time
0
2000
4000
6000
8000
10000

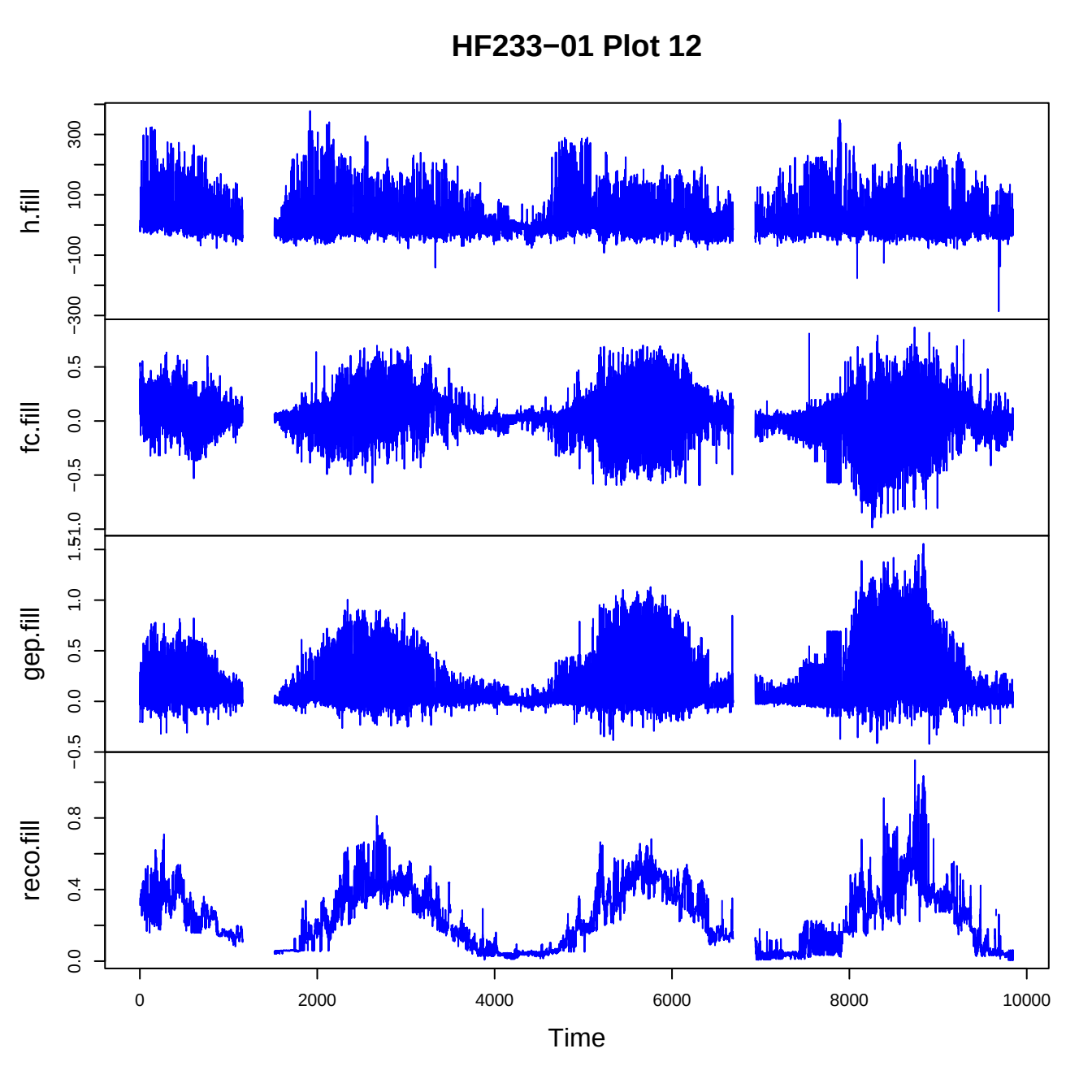

HF233−01 Plot 7
vwc1
vwc2
vwc3
vwc4
0.15
0.25
0.35
0.45
0.00
0.10
0.20
0.30
0.0
0.1
0.2
0.3
0.4
0
2000
4000
6000
8000
10000
Time


HF233−01 Plot 8
vwc5
vwc6
vwc7
vwc8
0.0
0.1
0.2
0.3
0.4
0.5
0.00
0.10
0.20
0.30
0
2000
4000
6000
8000
10000
Time


HF233−01 Plot 9
vwc9
0.00
0.10
0.20
0.30
soil.wat1
10
20
30
40
soil.wat2
10
15
20
25
tsoil1
−5
0
5
10
15
20
0
2000
4000
6000
8000
10000
Time


HF233−01 Plot 10
tsoil2
precip
gep
reco
Time
0
2000
4000
6000
8000
10000


HF233−01 Plot 11
le.fill
h.fill
fc.fill
gep.fill
Time
0
2000
4000
6000
8000
10000


HF233−01 Plot 12
h.fill
fc.fill
gep.fill
reco.fill
300
100
−100
−300
0.5
0.0
−0.5
1.0
1.5
0.8
0.4
0
2000
4000
6000
8000
10000
Time