Varia
2010-01-12 to 2010-01-20

During this period data from sensors attached to the AM16/32 multiplexor were shifted one channel ahead so that channel two was read with the instructions for channel one. This resulted in the first channel on the multiplexor (Pyranometer) to be completely lost. Three channels (HMP45_Tair, CNR1_CMin and Diffuse_1) were lost because they were read with an incorrect range. BF3_PAR was read with the wrong range and daytime values were lost. Two channels (HMP45_RH and AirPress) were read with the wrong span and offset but were recovered by backing out the wrong values and applying the correct ones.

Timeline:

Date	DOY	Time	Notes
2010-12-30	001	00:30	First bad data from multiplexor
2011-02-22	053	9:00	Field visit power down and later restored

Channels affected and the solution:

Channel	Status-fix
Pyranometer	Lost - fill with Tonzi
Rnet	Recovered
PAR_in	Recovered
PAR_out	Recovered
HMP45_Tair	Lost - fill Tonzi Floor HMP45
HMP45_RH	Offset - fixed
AirPress	Offset - fixed
CM_in	Lost - fill with Tonzi
CG_in	Recovered
CM_out	Recovered
CG_out	Recovered
Rs_Ro1	Recovered
PRT1	Recovered
BF3_PAR	Daytime values lost - fill with PAR_in
BF3_Diffuse	Recovered
LED_Red_in	Recovered
LED_NIR_in	Recovered
LED_Red_out	Recovered
LED_NIR_out	Recovered

The following steps were used to fix the data:

1) The data from the column zero_mux2 was thrown out
2) Data for the 20 columns from Pyranometer to Nir_out were shifted one column to the right leaving the Pyranometer column empty.

3) The data now in the RH column was collected with the instruction for Tair. The Tair multiplier (0.1) and offset (-40) were removed and the RH multiplier (0.1) and offset (0.0) were applied.

4) The data now in the AirPress column was collected with the instructions for the RH. The RH multiplier (0.1) and offset (0.0) were removed and the AirPress multiplier (0.0184) and offset (60) were applied.

5) The CNR1 CM (shortwave) incoming data was filled with -99999

6) The total incoming PAR from the BF3 sensor, Diffuse_1 was filled with -99999

7) Rs_Ro1 and PRT1 were shifted one column over into PRT1 and BF3_PAR. BF3_PAR was in the Rs_Ro1 column but was recorded with the wrong range and is only good at very low light levels. The column order was fixed.

The times affected are:
2010-01-12 2300 to 2010-01-20 1030
2010-01-20 1800
2010-01-20 2030
2010-01-20 2100

One new file was created with the repaired data. The affected standard deviation were replaced by -99999. This file should replace the original files for standard processing:

gr3_2011020.23x