

EC150 post analysis

site	EC150 S/N	Lab H2O bias g/m3 (from N2 zero)	Lab H2O gain	Field H2O bias g/m3 28May	Lab CO2 bias mg/m3 (from (N2 zero))	Lab CO2 gain	Field CO2 bias mg/m3 28May
tnw02	1233	-0.39	1.00	0.0	-9	0.99	+7
tnw05	1384	-0.96	0.93	-2.4	-29	0.93	-25
tnw09	1392	+0.34	0.97	-0.7	-14	0.97	-4
tse01	1385	0.31	1.06	-0.4	+9	1.01	+6
tse02	1383	-0.1	0.80	-0.4	-9	2.02(!)	-4
tse05	1386**	-0.3	1.03	+0.8	-10	1.00	+40
tse07	1387/1389?	0.35/0.02	0.94/0.96	+0.2	-15/-6	0.98/0.99	+16
tse12	1390	x	0.92	-1.0	-1	1.00	0
rsw04	Li813			+3.6			+13
me01	1807 (can't be right – 1432?)	0.19	0.93	-0.5	5	1.02	-2
me06	Li1166			+3.0			-10
me07	1388	-0.06	0.96	-0.7	-14	0.96	+4
v01	1386**	-0.3	1.03	+0.3	-10	1.00	-5
v03	1433	x	0.96	+0.3	-10		-20
v04	Li1167						
v06	Li1164			+3.4			+13
v07	Li1163			+3.6			+8

So...we have a mess:

- 3 EC150 serial numbers aren't known
- Haven't (yet) done lab tests of the LiCors
- Of the comparables, less than half agree between lab and field
- Only 2 EC150s have good comparisons with both H2O and CO2
- The LiCor H2O values all have a large offset from the EC150, they are about 2 g/m3 higher than TRH
- EC150.tnw02 used as the H2O reference is about 1.5 g/m3 lower than TRH. Even the highest EC150 value (tse05) is lower than the TRH by at least 0.5 g/m3.
- Even during the "well mixed" 28 May 21:00-23:00 case, TRH values vary by +/-0.4 g/m3, so a cross-site comparison can't be accurate.
- The good news: after 29May, the biases appear to be about constant. (There was a change in the period 26–29 May.)
 - Licors, using v07 as a reference:
 - before 26 May rsw04, v04, and v06 had biases of +0.2, -0.3, +0.3, respectively
 - after 26 May, these had biases of ~~0.5~~, 1.3, 0.0, respectively
 - EC150s, using tse07 as a reference: biases are about constant throughout
- 28May 21-23; 14 Jun 01-03; 22May 21-23; (but really want night cases – lots of wind, no local uptake...)