

Supplemental File for “The Niwot Ridge Subalpine Forest US-NR1 AmeriFlux site – Part I: Data acquisition and site record-keeping”

by S. P. Burns et al.

README for: USNR1_opto22.zip

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This is a README file for the zip archive of the opto22 software that ran on a Dell laptop (quacker, linux, Linux version 2.4.18-5 (bhcompile@daffy.perf.redhat.com) (gcc version 2.96 20000731 (Red Hat Linux 7.3 2.96-110))).

The files included in the file USNR1_opto22.zip are:

```
-rw-rw-r-- 1 sburns aster 2150400 Jun 16 2005 opto22_140430.tar
-rw-rw-r-- 1 sburns aster 389120 Oct 20 2003 opto22_urquell.tar
```

More information is here (the logbook could also be consulted):

```
=====
* when using the old data system to run the HYDRA (i think this
  is on the ibm thinkpad??):
```

```
/usr/local/cuff/src/adam/stop_opto
/usr/local/cuff/src/adam/start_opto
```

look in:

```
/usr/local/cuff/aster/projects/NIWOT/src/opto22/
```

```
chemcontrol.cxx
cmds.c
```

```
/usr/local/cuff/src/adam/
```

```
command_opto
```

```
eg,          command_opto 3100 60
             rserial quacker 210
```

```
just do a "make" after modifying the programs in
/usr/local/cuff/aster/projects/NIWOT/src/opto22/
```

```
| db9_ch2  db9
|          EDGEPORT box
| db9_ch1  db9_ch3
-----
```

db9_ch1 = connected to LI-7000

db9_ch2 = pig-tailed to db9_ch3

db9_ch3 = null modem connected right to
port. then blue cable with pigtails
to go to db9_ch2. the other pigtail
goes to the opto22.

=====

a few old emails:

```
-----
To: maclean@ucar.edu
cc: sean.burns@Colorado.EDU
Subject: Re: opto22 output...
Date: Thu, 28 Oct 2004 09:28:16 -0600
From: "Sean Burns" <Sean.Burns@Colorado.EDU>
```

Gordon,

that darn horse keeps going behind the cart...(maybe it's time to
shoot the horse!?)...

thanks for setting this up...it will be better to have something i can
use with prep so i can dump out both the licor and opto22 data at the
same time (though maybe i could do this with data_dump too...i haven't
used data_dump before)...

things with hydra appear to be running fine...i'll look at it a bit
more carefully today...and modify the hydra_prog.txt so it is more
appropriate for our setup...

SpB.

```
> Sean Burns wrote:
> > Hi Gordon,
> >
> > ok, this makes sense...as long as the numbers are being stored
> > properly i can sort things out later. I guess i can modify
> > prep.config to work with this...or would it be best to modify the
> > hydra_prog.txt to make it consistent with what is in prep.config?
> >
>
> You've got the cart before the horse...
>
> You set hydra_prog.txt to do what you want hydra to be doing. That
> is the relay program.
>
> The stuff in prep.config is an attempt to convert the hex values
> to some indices from 0 to N. The mode_int entry in prep.config
> is probably not much use to you.
```

```

>
> I just added an entry to prep.config for you that will just
> output the decimal value of the relay settings:
>
> s=quacker:164 c=serial_short("") d=(opto22val) r=1 m=(0:100000)
>
>
> So you can now do
>
> prep -D opto22val ....
>
>
> Gordon

```

```

-----
To: maclean@ucar.edu
cc: sean.burns@Colorado.EDU
Subject: see my problem...
Date: Sat, 25 Oct 2003 12:33:34 -0600
From: "Sean Burns" <Sean.Burns@Colorado.EDU>

```

Gordon,

i just noticed what i was doing wrong...i needed
to add the "CALPROGRAM" part to:

```

#if OPTOTEST == FASTTEST
#include "fast_program.c"
#elif OPTOTEST == SLOWTEST
#include "slow_program.c"
#elif OPTOTEST == CALPROGRAM
#include "calprogram.c"
#else
#include "norm_program.c"
#endif

```

to the chemcontrol.cxx program....ok, looks ok now.

thansk!

```

-----
To: maclean@ucar.edu
cc: sean.burns@Colorado.EDU
Subject: error with command_opto...
Date: Sat, 25 Oct 2003 12:28:40 -0600
From: "Sean Burns" <Sean.Burns@Colorado.EDU>

```

Hi Gordon,

I'm up at the site and tried to run "command_opto"...it looks like
that program never recompiled on the quacker and it's giving me an
error..which is:

```

[cuff@quacker opto22]$ /usr/local/cuff/src/adam/command_opto 0200 2400

/usr/local/cuff/aster/projects/NIWOT/src/opto22/chemcommand: error
while loading shared libraries: libstdc++.so.5: cannot open shared
object file: No such file or directory

```

I tried to recompile chemcommand and it gave me the following errors:

```
[cuff@quacker opto22]$ mv chemcommand chemcommand_old
[cuff@quacker opto22]$ make
g++ chemcommand.c -o chemcommand
chemcommand.c: In function 'void sighandler (int)':
chemcommand.c:36: 'strsignal' undeclared (first use this function)
chemcommand.c:36: (Each undeclared identifier is reported only once for
each function it appears in.)
make: *** [chemcommand] Error 1
```

to get around this i created a program which would run call only...to do this i modified or created the files:

```
-rw-rw-r-- 1 cuff cuff 433 Oct 25 12:09 calprogram.c
-rw-rw-r-- 1 cuff cuff 5967 Oct 25 12:17 chemcontrol.cxx
-rw-rw-r-- 1 cuff cuff 1959 Oct 25 12:07 cmds.c
```

to which i added something called, "callonly", ie,

```
struct command callonly[] =
{
    "0200", 120, /* Cal 1 ON */
    0,0, /* end of command array */
}; /* 2 minutes */
```

then i did a 'make'...

```
[cuff@quacker opto22]$ make
g++ -g chemcontrol.cxx -o chemcontrol
[cuff@quacker opto22]$
```

this seemed to work ok, but it doesn't seem like it's quite working correctly...ie, i'm getting:

```
[~] rserial quacker 210
*** use ^d or ^c to terminate rserial
send socket open to quacker
>00JB040??\r
>00JB080??\r
>00JB100??\r
>00JB020??\r
>00JB040??\r
>00JB080??\r
```

when i thought i would be getting the same thing over and over...

anyway, it would be good to have "command_opto" working at some point. . .if you have some ideas on what needs to be done please let me know...

thanks!

SpB.