

Data Processing School :: Exercise CR2

Source directory	/data/lofarschool/data/Exercise-CR1
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Context

Have a look at some LOFAR TBB data.

Prerequisite

- Some C/C++ programming.
- Installed USG software ([CR-Tools](#) package)
- Successful completion of [Exercise CR0](#)

Description

Use a simple tool to generate a dynamic spectrum from LOFAR TBB data. Track down files with high RFI.

Files & Directories

```
/data/lofarschool/data/Exercise-CR
|-- files.txt
|-- files_sm.txt
|-- rw_20071121
|   |-- <many data files>
|-- rw_20071122
|   |-- <many data files>
|-- rw_20071123
|   |-- <many data files>
```

And the exercise_cr2 executable.

Step-by-step instructions

1. Execute the exercise_cr programm giving a list of files as the argument. E.g.:

```
exercise_cr2 /data/lofarschool/data/Exercise-CR/files_sm.txt
```

or

```
exercise_cr2 /data/lofarschool/data/Exercise-CR/files_sm.txt
```

2. This generates a dynamic spectrum of LOFAR data.

3. Make a local copy of the "files.txt" file and e.g. try to hunt down an event with excessive RFI. Then e.g. use the program from exercise_cr1 to plot it.

Example outputs

Executing:

```
exercise_cr2 /data/lofarschool/data/Exercise-CR/files_sm.txt
```

produces the following output on the shell and two postscript plots with the dynamic spectrum (log and linear scales):

```
(horneffer)lioff024> exercise_cr2 /data/lofarschool/data/Exercise-
CR/files_sm.txt
Excercise-CR2 read in 50 filenames.
tbbctlIn:attachFile: Files [/data/lofarschool/data/Exercise-
CR/rw_20071121/rw_20071121_011001_0100.dat] contain more than 8388608
samples! Truncating to 8388608 samples/channel!
tbbctlIn:attachFile: Files [/data/lofarschool/data/Exercise-
CR/rw_20071121/rw_20071121_025501_0100.dat] contain more than 8388608
samples! Truncating to 8388608 samples/channel!
GenDynSpec: processed 50 files out of 50!
Excercise-CR2 generated Dynamic-Spectrum with shape: [1025, 50]
Elapsed: 0:42.22 - CPU: 31.601u+3.612s = 83.3%
```

Bug Reports

If you are experiencing trouble getting the exercise to work, this is the place to leave a note about it.

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