

# Data Processing School :: Exercise CR1

Source directory	/data/lofarschool/data/Exercise-CR1
Contact person	Andreas Horneffer, Lars Bähren

## Context

This exercise demonstrates the usage of the `DataReader` and its ability to abstract the file format from the user.

## Prerequisite

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

## Description

In this exercise you use the [DataReader](#) to open different types of files with time-series data and make some simple plots.

## Files & Directories

```
/data/lofarschool/data/Exercise-CR
|-- 2006.02.23.04:02:50.283.event
|-- rw_20071121
|   |-- rw_20071121_000001_0100.dat
|-- rw_20080701_162002_0109.h5
```

And the `exercise_cr1` executable.

## Step-by-step instructions

1. Execute the `exercise_cr1` executable
  - This produces some output and some plots in postscript files
2. Check in the source code how this is done.
3. Modify the source, compile it, and see what it does.
  - Check the documentation of the [DataReader](#) to, e.g., change the block-size, block number, or plot different data.

## Example outputs

The unmodified `exercise_cr1` executable should produce the following output and six postscript files:

```
(horneffer)lioff024> ./exercise_cr1
Loading LOPES event.
genOutput: Observatory: LOPES
           Date: 1140667370
           Filesize: 65536
           plotting voltage, #xpoints:65536 #ypoints:65536
           plotting FFT, #xpoints:32769 #ypoints:32769
Loading raw tbbctl data.
genOutput: Observatory: LOFAR
           Date: 1195603201
           Filesize: 2048000
           plotting voltage, #xpoints:2048000 #ypoints:2048000
           plotting FFT, #xpoints:1024001 #ypoints:1024001
Loading LOFAR hdf5 data.
-- nof dipole datasets = 1
-- sample frequencies = [200]
-- Setting up DataIterator objects ...
-- Setting up header record ...
genOutput: Observatory: LOFAR
           Date: 1214929202
           Filesize: 2048000
           plotting voltage, #xpoints:2048 #ypoints:2048
           plotting FFT, #xpoints:1025 #ypoints:1025
```

## 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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Last update: **2017-03-08 15:27**

