

# Velo View

## *Introduction and Overview*

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# Outline

- Goal
- Requirements
- Architecture
- Features
- Hands on
- Support
- Future
- Questions



# Goal

This application is part of the Vetra project and is a tool for monitoring and trending changes of the processing parameters of the VELO's TELL1 boards.



# Requirements

Application should:

- have a graphical user interface (GUI)
- be able to connect to the Velo condition database
- show an individual set of parameters for each TELL1 board as an xml tree
- create histograms for a trending analysis



# Architecture

Dependencies:

- Python
- PyQt4
- CondDB
- ROOT/PyROOT

All of the used libraries are part of the standard LHCb software release.



# Architecture

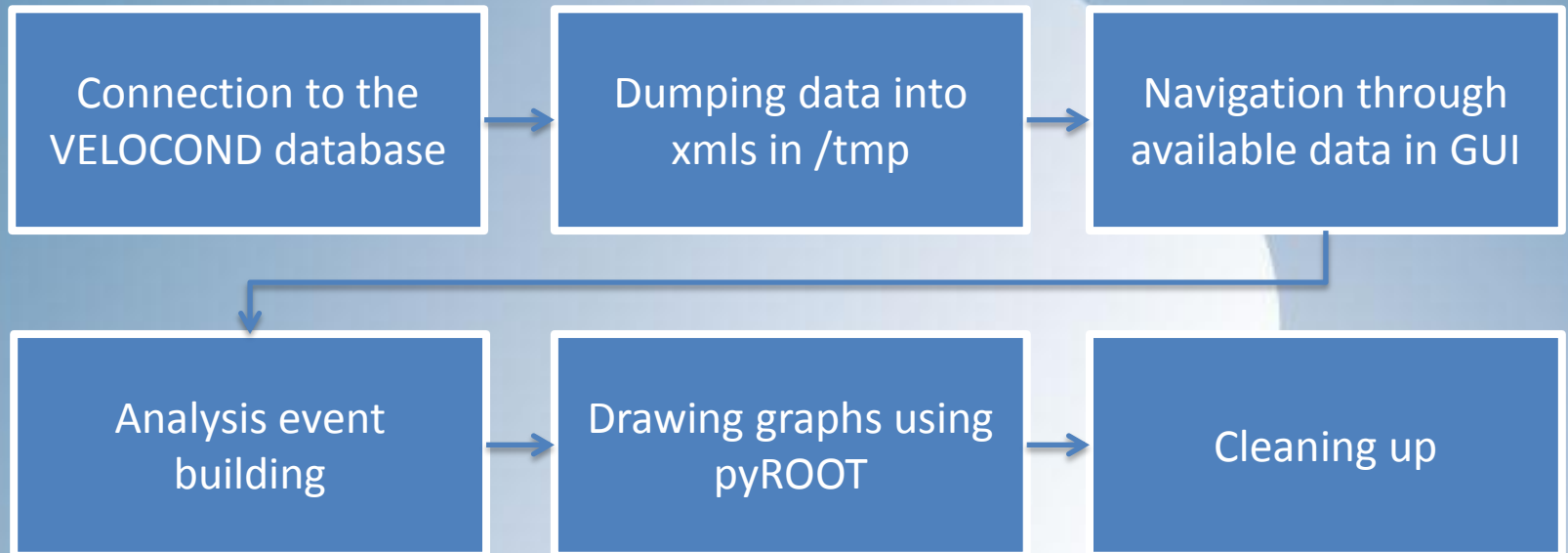
## Why Python?

- extremely suitable for writing small-medium tools like this one
- some crucial parts were already implemented (connection to the database [CondDB], graph representation [pyROOT])
- fast development
- code is easy to modify and to maintain
- it's fast enough and stable
- platform independent
- many LHCb applications and libraries are written in Python so it will be supported for many years



# Architecture

How does it work?



# Features

There are 4 ways of analysis:

- Clicked Params
- Params
- Clicked Vec Params
- Vec Params





# Hands on

You need to specify a project which loads the environment with Python, CondDB, PyQT4 and ROOT.

➤ `$ SetupProject Vetra --use Tools/CondDBUI`

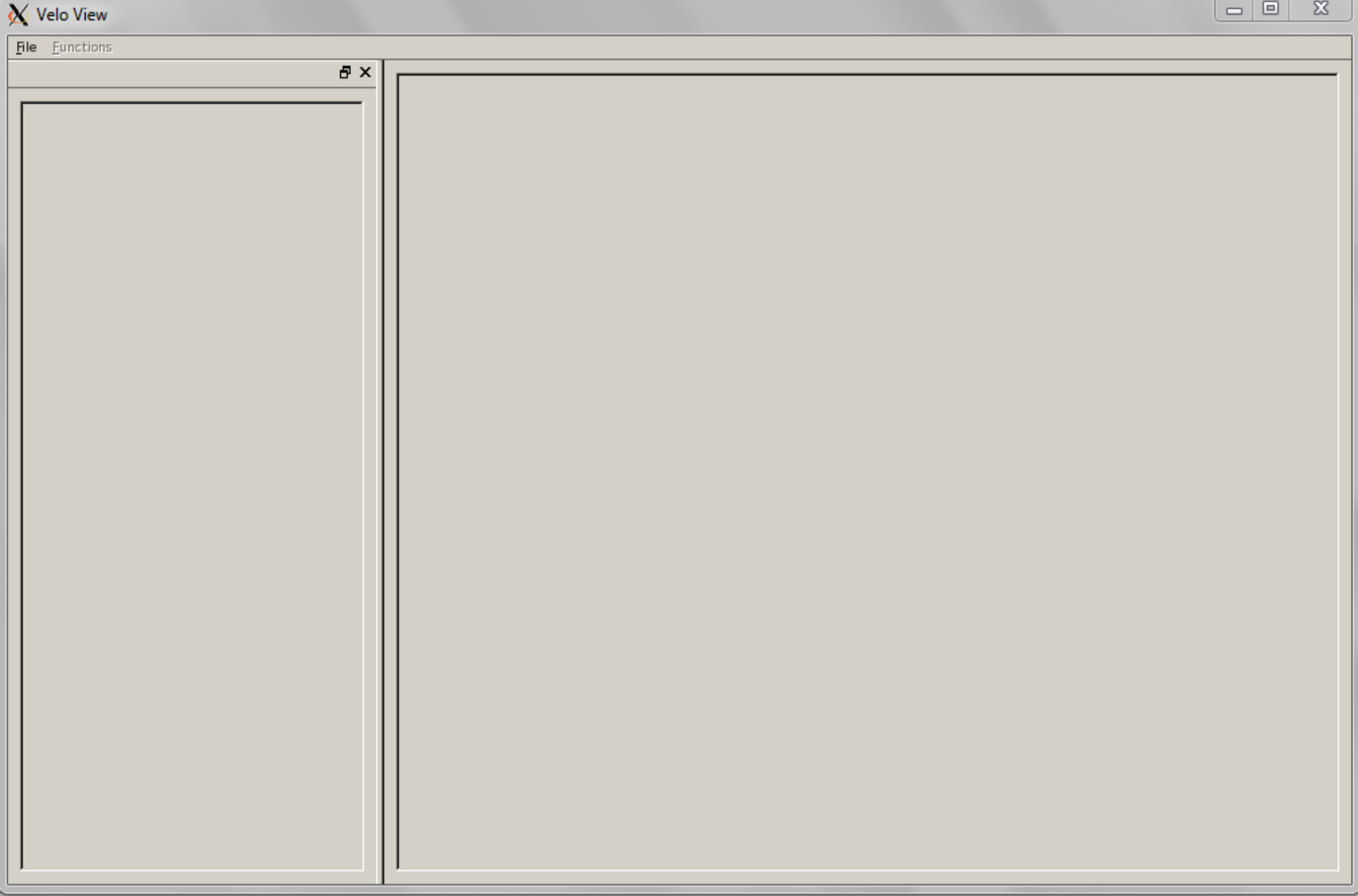
There are 2 ways of starting Velo View:

- parameterless:
  - `$ VeloView`
- with `-i` parameter:
  - `$ VeloView -i path_to_velocond_DB`

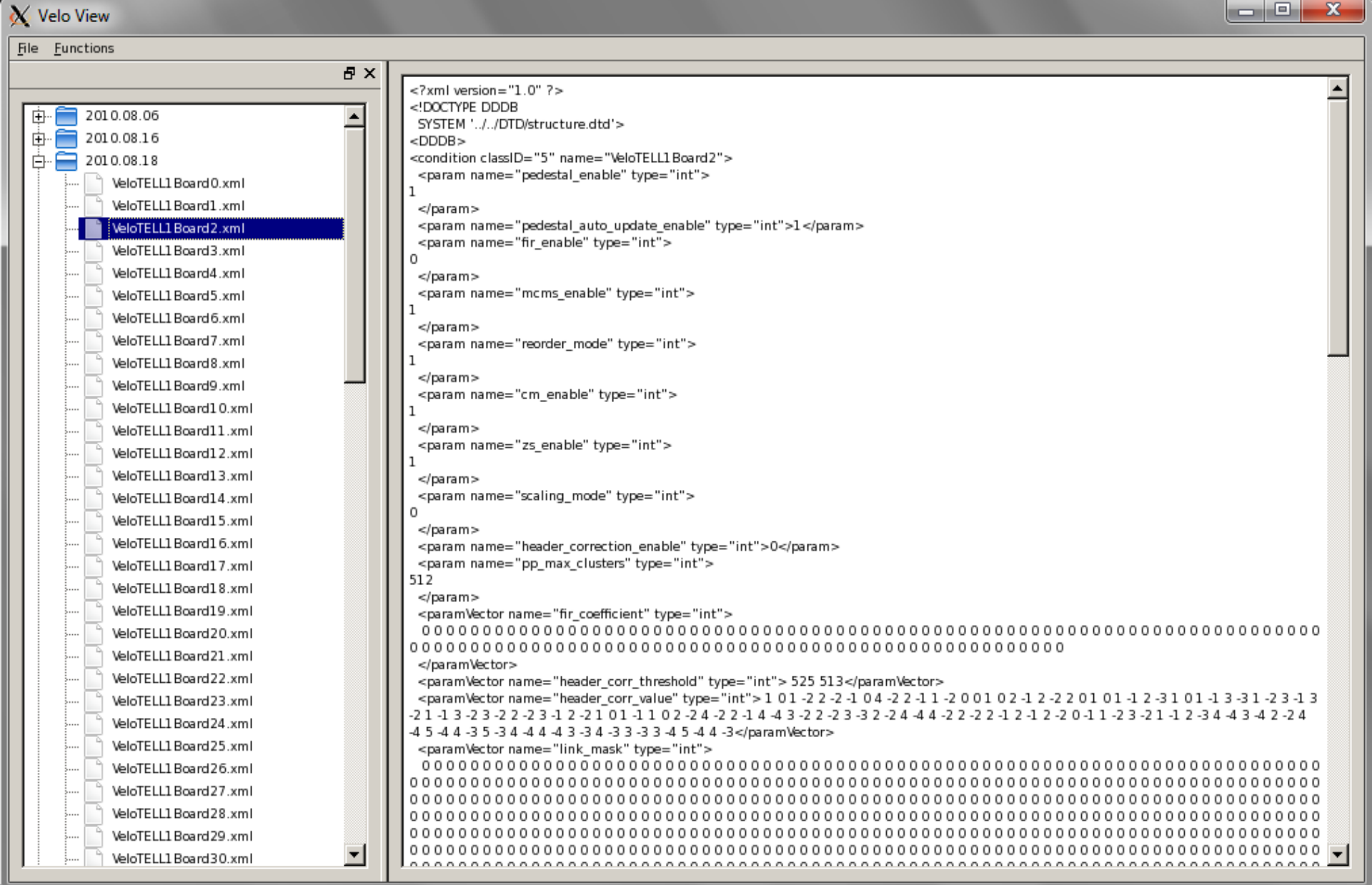


# How does it look in action?





Inactive Window



Active Window

**Velo View**

File Functions

ClickedParams	F3
Params	F4
ClickedVecParams	F5
VecParams	F6

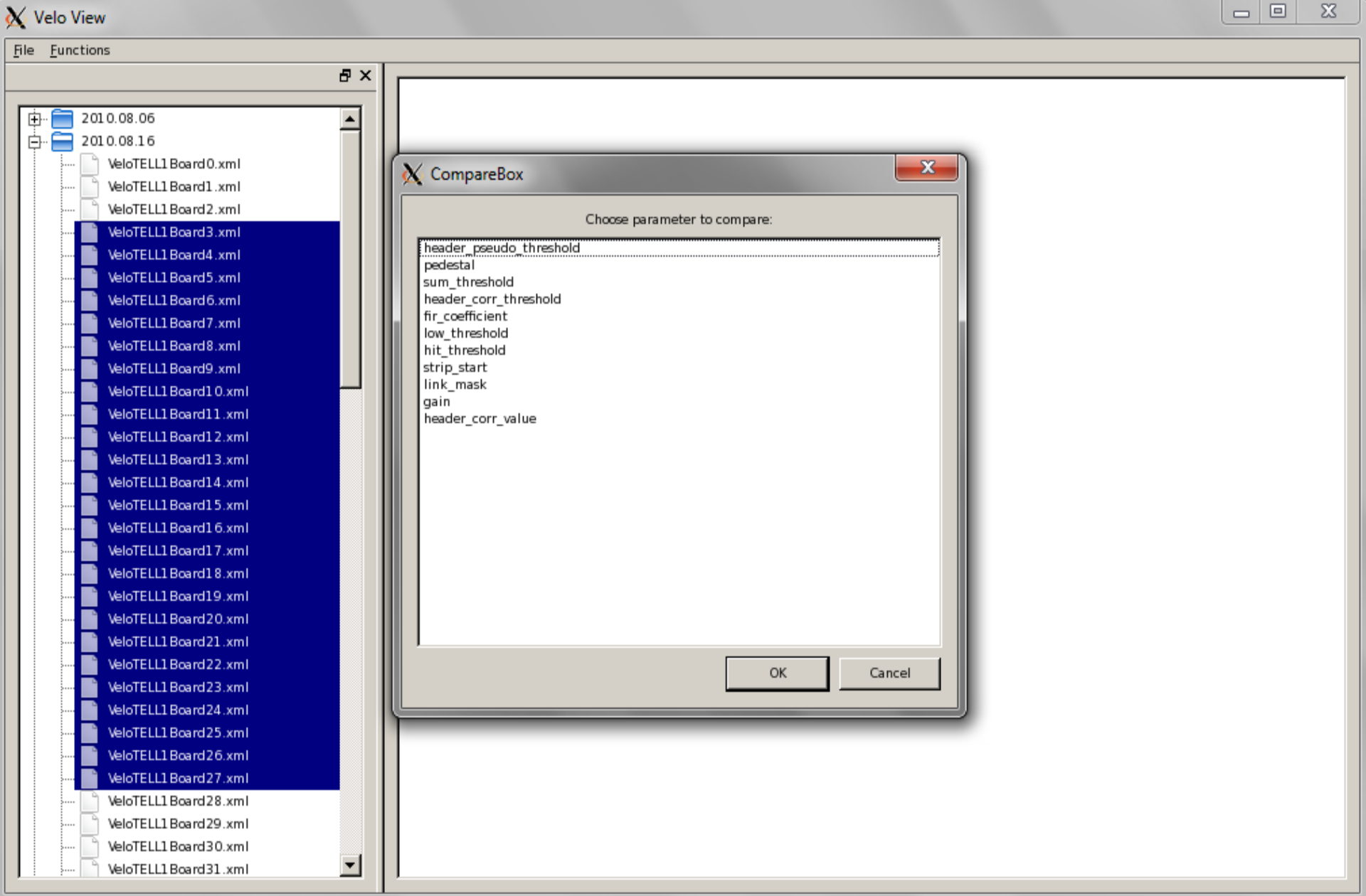
- VeloTELL1 Board0.xml
- VeloTELL1 Board1.xml
- VeloTELL1 Board2.xml**
- VeloTELL1 Board3.xml
- VeloTELL1 Board4.xml
- VeloTELL1 Board5.xml
- VeloTELL1 Board6.xml
- VeloTELL1 Board7.xml
- VeloTELL1 Board8.xml
- VeloTELL1 Board9.xml
- VeloTELL1 Board10.xml
- VeloTELL1 Board11.xml
- VeloTELL1 Board12.xml
- VeloTELL1 Board13.xml
- VeloTELL1 Board14.xml
- VeloTELL1 Board15.xml
- VeloTELL1 Board16.xml

```
<?xml version="1.0" ?>
<!DOCTYPE DDDDB
  SYSTEM '../..'/DTD/structure.dtd>
<DDDDB>
<condition classID="5" name="VeloTELL1 Board2">
  <param name="pedestal_enable" type="int">
1
  </param>
  <param name="pedestal_auto_update_enable" type="int">1</pa
  <param name="fir_enable" type="int">
0
  </param>
  <param name="mcms_enable" type="int">
1
  </param>
  <param name="reorder_mode" type="int">
1
  </param>
  <param name="cm_enable" type="int">
1
  </param>
  <param name="zs_enable" type="int">
1
  </param>
  <param name="scaling_mode" type="int">
0
  </param>
  <param name="header_correction_enable" type="int">0</param>
```

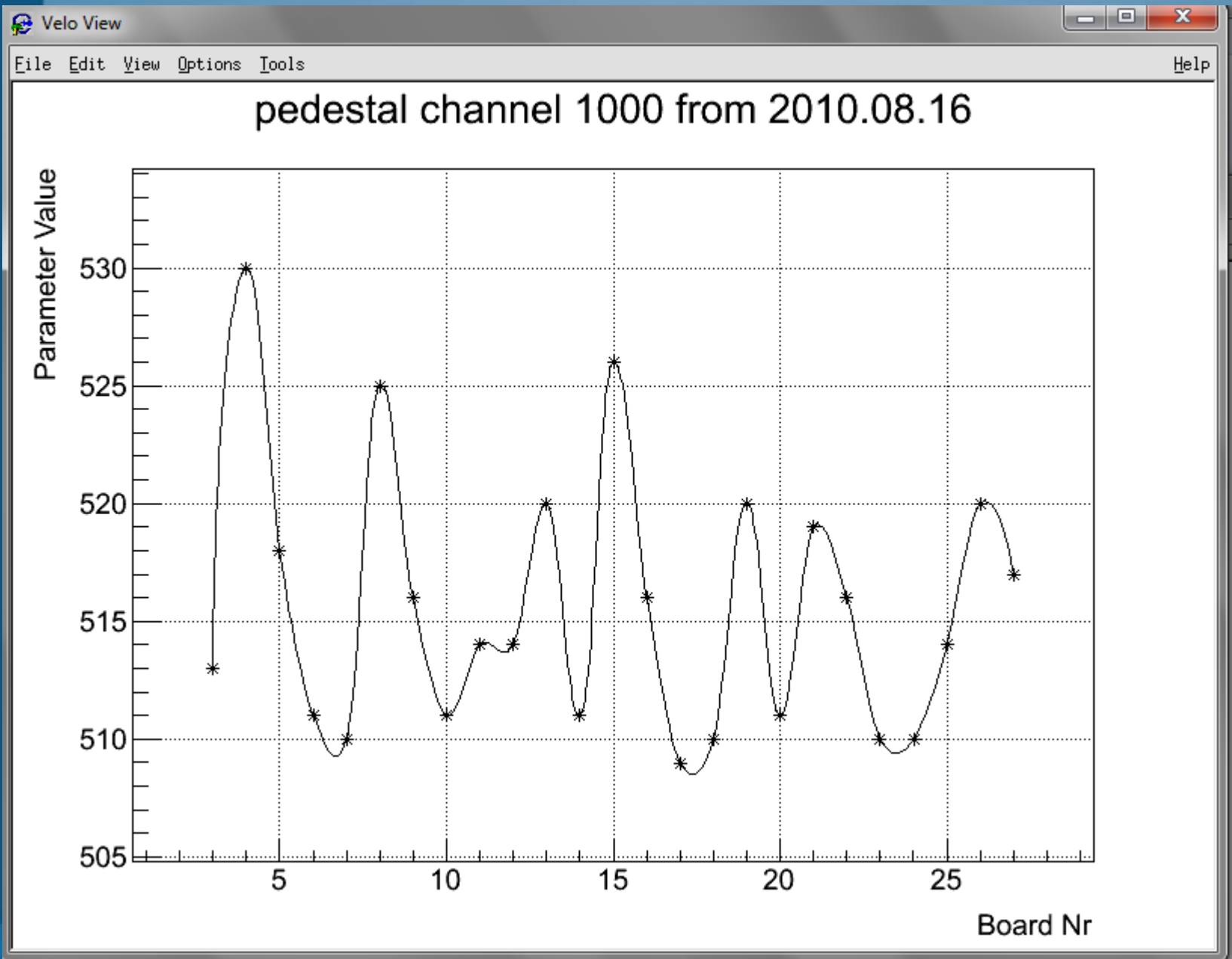
# Functions

```
mwysoki@lhcb0:~/browservelo/src
.bash_history      .gconf/           setlhcb
.bash_logout      .gconfd/          .ssh/
.bash_profile     .gimp-2.6/        .thumbnails/
.bashrc           .gnome2/          velobro
.bashrc~          .local/           velocon/
browservelo/      .mozilla/         velocond_gui_note/
.cache/           .nautilus/        VeloDB_Browser.pdf
.ccache/          new_db/           .viminfo
cmtuser/          old_db/           .vimrc
.config/          pgtestesty/       .Xauthority
.dbus/            .pylint.d/        .xemacs/
Desktop/          .recently-used.xbel .zshrc
.emacs            .rhosts
.emacs.d/         .rootauthrc
[mwysoki@lhcb0 src]$ ./browserclass.py -i ../../new_db/VELOCOND.db
^C^CTraceback (most recent call last):
  File "./browserclass.py", line 232, in <module>
    browser = QtGui.QApplication(sys.argv)
KeyboardInterrupt
^C
[mwysoki@lhcb0 src]$ ./browserclass.py
ERROR: Entered value isn't a number!!!
ERROR: Entered value isn't a number!!!
```

Errors are displayed in a console



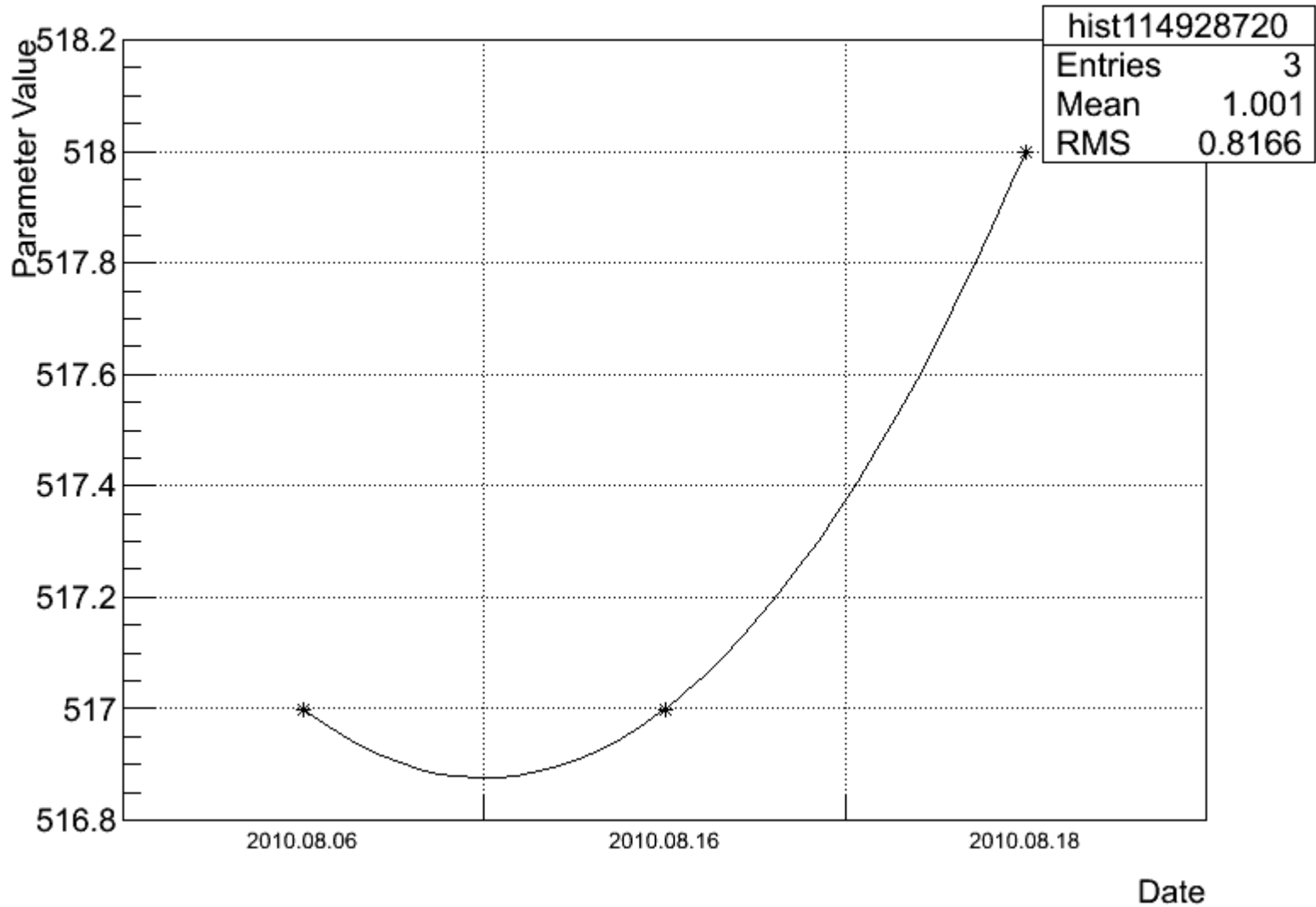
List of possible vector parameters



Pedestals for selected boards

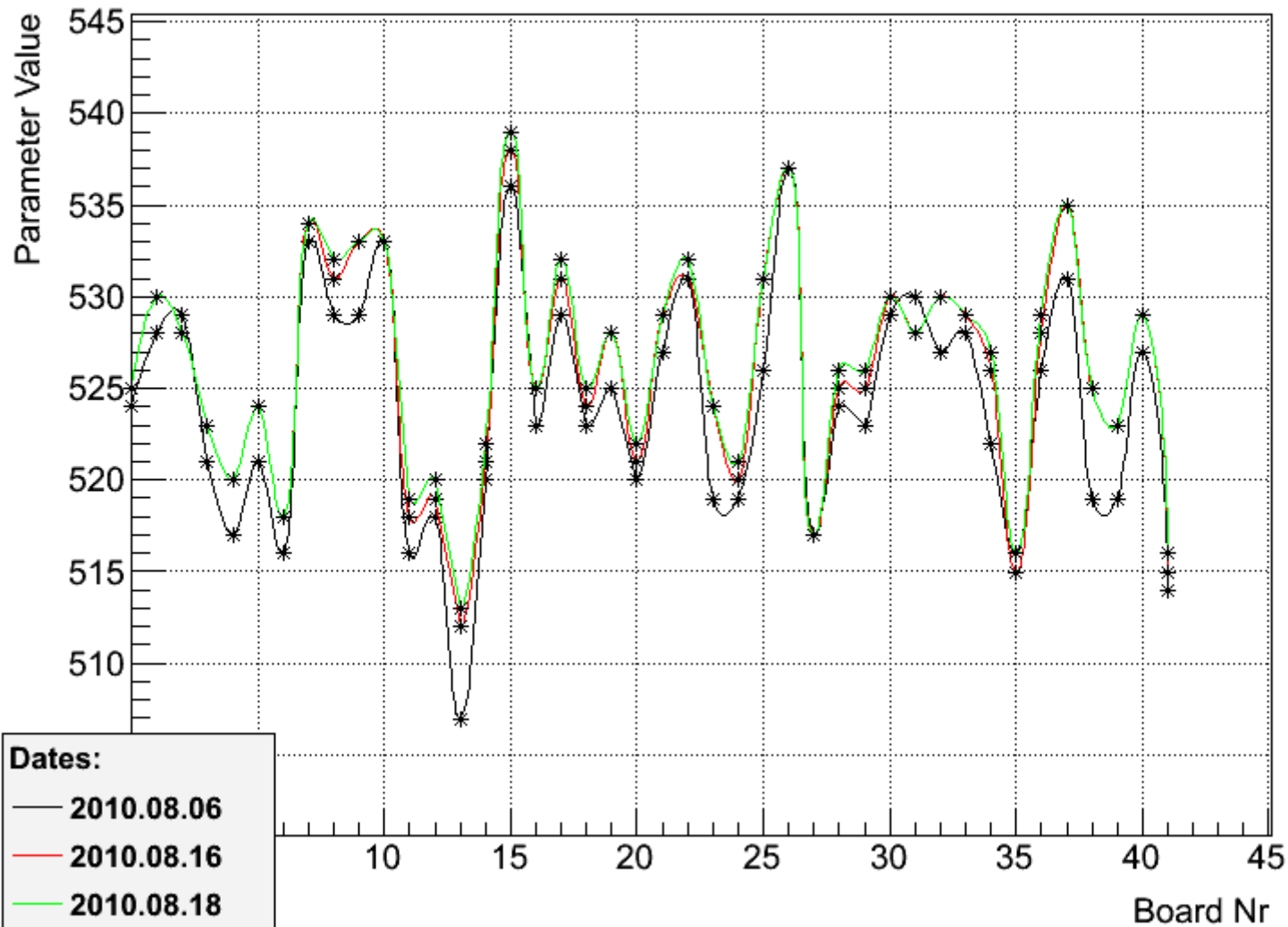


# pedestal channel 1111 for TELL1NR16



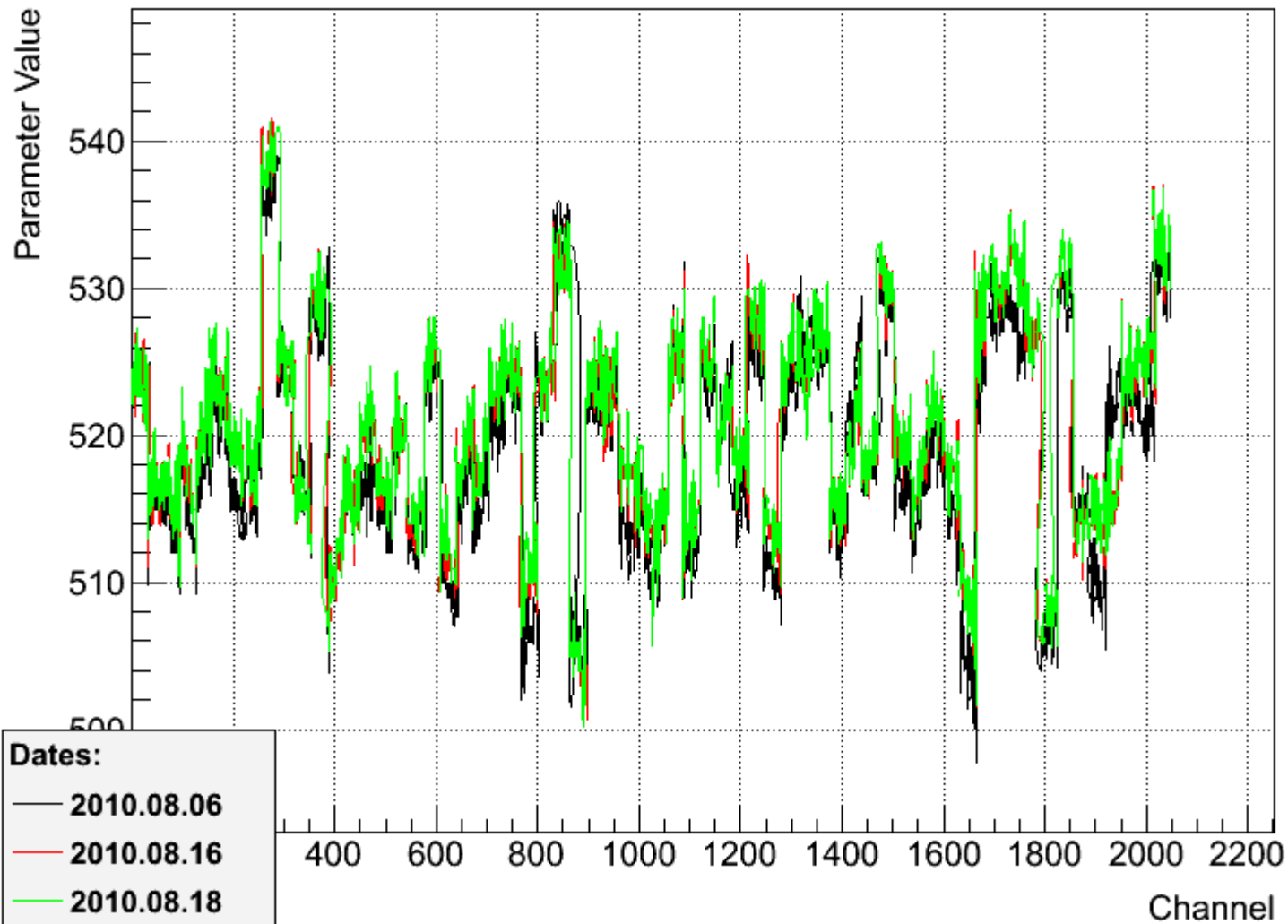
Pedestals for one channel

## pedestal channel 1234 for R Stations



# Pedestals for R stations

## pedestal all channels for TELL1NR86



Pedestals, all channels for selected board

# Support

Velo View project will be continuously supported and maintained for the next years.

All new functionalities and upgrades will be added if requested. We already have some new ideas in mind but...



# Future

... it's future depends on a feedback which we will get from you.



# Questions



# Contact

- Project supervisor:
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- Developer:
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