

User Software :: LOPES-Eventbrowser

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Overview

LOPES-Eventbrowser is qt-based browser for the LOPES collaboration at Forschungszentrum Karlsruhe, designed to simplify data analysis of data obtained from both the LOPES antennas as well as the KASCADE-Grande stations. This program provides a QT-powered, easily extensible user interface for browsing data stored in ROOT files, using [ROOT](#) as the backend.

- [Project page at Google Code](#)
- [Quick Start Guide](#)

Features

Lopes-Eventbrowser will read any arbitrary ROOT tree produced by a compatible version of ROOT and use the data in the ROOT tree for analysis.

The current notable features are:

- *User interface*
 - Provides a tabbed interface for easy switching between multiple canvases.
 - Provides an option (in the main dialog) "Draw in new tabbed window" to draw each successive graph in a new tab, making graphing multiple graphs convenient.
 - Tabs can be saved either one by one or altogether in formats supported by ROOT, such as postscript, pdf, ROOT, c++ macro, images, etc.
 - Program functions are accessible through user interface for quick access; some completions are supported, such as the branch names from the ROOT file, to minimize typos.
 - Provides a table view of data in ROOT file with customizable columns.
- *Graphing*
 - Can use data from any compatible ROOT tree for customizable graphing. The parameters are taken from user input, therefore convenient for testing out several conditions.
 - See graph types for graph types currently available.
 - The code structure around graph types are designed to be extensible; therefore it's straightforward to extend the program to include more graph types. See `AddingNewGraphType`.
- *ROOT file manipulation*
 - Can handle arbitrary ROOT file or files (using TChain) containing ROOT TTree, independent of the structure inside the root tree. The relevant information such as branches present is discovered programatically.
 - Provides a convenient interface for applying event cuts to ROOT tree: feedback such as number of events after cut are given immediately, and the resulting events after cut can be saved in a new ROOT file. Event cuts can be saved to facilitate switching between different cuts.

- Reading of ROOT tree is customizable through a config file which can specify selected branches for reading - useful for saving a subset of branches in a ROOT tree to a new ROOT tree. See ConfigSettingFiles, section "Root branches configuration file".
- Data in a ROOT tree can be displayed in the user interface in a table.
- *Importing/Exporting*
 - The canvases created during a session of the program can be exported to a text file, which can be imported later by the program for further editing. This is useful for persisting information between program sessions as well as working on multiple groups of canvases. The text file is also easily editable by hand, creating possibility for other uses. ConfigSettingFiles, section "Canvas definition file".
 - The canvases can also be saved in other useful formats supported by ROOT, namely, postscript, EPS, PDF, JPEG, GIF, c++ macro, and ROOT binary. For the format postscript, there is also an option to save all canvases to a single file.

Installation

Non-members may check out a read-only working copy anonymously over HTTP:

```
## Using Subversion
```

```
svn checkout http://lopes-eventbrowser.googlecode.com/svn/trunk/ lopes-eventbrowser
```

```
## Using Git
```

```
git svn clone http://lopes-eventbrowser.googlecode.com/svn/trunk/ lopes-eventbrowser
```

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