

# javaROOT

## A Java Interface to ROOT

M. Lynch   M. Stanitzki   J. Strube

Rutherford Appleton Laboratory  
STFC

July 2009

# Outline

## 1 Introduction

- javaROOT

## 2 Features

- Histograms
- Trees
- Example

# javaROOT

- Allows creation of (not reading/modification of existing) ROOT files in Java.
- Provides access to some of the most commonly used features.
- (Further processing can then be carried out in dedicated ROOT scripts.)
- Runs on both Linux and Windows.

“Lets you get the data into ROOT.”

# javaROOT

- Allows creation of (not reading/modification of existing) ROOT files in Java.
- Provides access to some of the most commonly used features.
- (Further processing can then be carried out in dedicated ROOT scripts.)
- Runs on both Linux and Windows.

“Lets you get the data into ROOT.”

# javaROOT

- Allows creation of (not reading/modification of existing) ROOT files in Java.
- Provides access to some of the most commonly used features.
- (Further processing can then be carried out in dedicated ROOT scripts.)
- Runs on both Linux and Windows.

“Lets you get the data into ROOT.”

# javaROOT

- Allows creation of (not reading/modification of existing) ROOT files in Java.
- Provides access to some of the most commonly used features.
- (Further processing can then be carried out in dedicated ROOT scripts.)
- Runs on both Linux and Windows.

“Lets you get the data into ROOT.”

# javaROOT

- Allows creation of (not reading/modification of existing) ROOT files in Java.
- Provides access to some of the most commonly used features.
- (Further processing can then be carried out in dedicated ROOT scripts.)
- Runs on both Linux and Windows.

“Lets you get the data into ROOT.”

# javaROOT

- Allows creation of (not reading/modification of existing) ROOT files in Java.
- Provides access to some of the most commonly used features.
- (Further processing can then be carried out in dedicated ROOT scripts.)
- Runs on both Linux and Windows.

“Lets you get the data into ROOT.”

# Histograms

- Fill TH1Fs, TH1Ds, TH2Fs, TH2Ds and TProfiles.
- Syntax very close to corresponding ROOT calls, e.g.:

```
RootSession sess = new RootSession( "FromJava.  
    root", "RECREATE", "Test", 1 );  
sess.newTH1F( "demoA", "Title1", 100, 0, 1 );  
sess.fillTH1F( "demoA", 0.9 );  
sess.delete();
```

# Histograms

- Fill TH1Fs, TH1Ds, TH2Fs, TH2Ds and TProfiles.
- Syntax very close to corresponding ROOT calls, e.g.:

```
RootSession sess = new RootSession( "FromJava.  
    root", "RECREATE", "Test", 1 );  
sess.newTH1F( "demoA", "Title1", 100, 0, 1 );  
sess.fillTH1F( "demoA", 0.9 );  
sess.delete();
```

# Histograms

- Fill TH1Fs, TH1Ds, TH2Fs, TH2Ds and TProfiles.
- Syntax very close to corresponding ROOT calls, e.g.:

```
RootSession sess = new RootSession( "FromJava.  
        root", "RECREATE", "Test", 1 );  
sess.newTH1F( "demoA", "Title1", 100, 0, 1 );  
sess.fillTH1F( "demoA", 0.9 );  
sess.delete();
```

# Histograms

- Fill TH1Fs, TH1Ds, TH2Fs, TH2Ds and TProfiles.
- Syntax very close to corresponding ROOT calls, e.g.:

```
RootSession sess = new RootSession( "FromJava.  
    root", "RECREATE", "Test", 1 );  
sess.newTH1F( "demoA", "Title1", 100, 0, 1 );  
sess.fillTH1F( "demoA", 0.9 );  
sess.delete();
```

# Trees

- Fill TTrees.
- Basic structure—only simple branches.
- Only supports branches of floats, ints, doubles and bools.  
(Additional types could be added manually.)

# Trees

- **Fill TTrees.**
- Basic structure—only simple branches.
- Only supports branches of floats, ints, doubles and bools.  
(Additional types could be added manually.)

# Trees

- Fill TTrees.
- Basic structure—only simple branches.
- Only supports branches of floats, ints, doubles and bools.  
(Additional types could be added manually.)

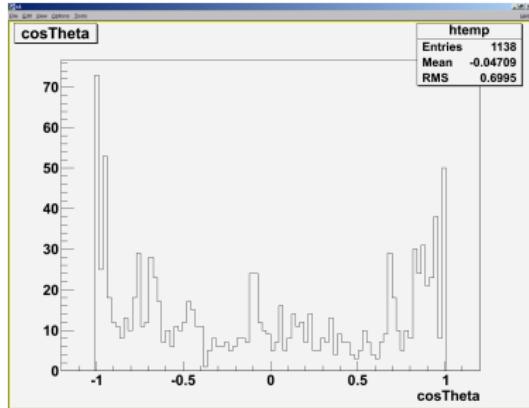
# Trees

- Fill TTrees.
- Basic structure—only simple branches.
- Only supports branches of floats, ints, doubles and bools.  
(Additional types could be added manually.)

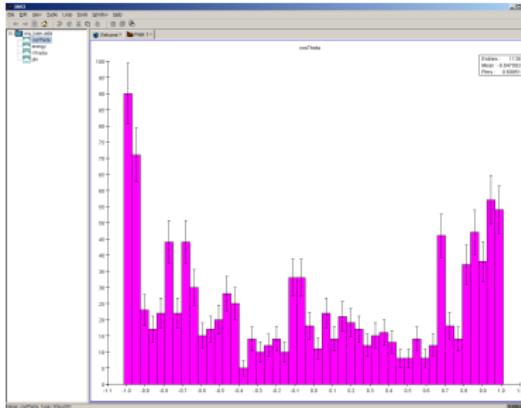
# Trees

```
sess.newTTree( "demoT", "TestTree", 99 );
sess.branchTTreeFloat( "demoT", "fX" );
sess.branchTTreeFloat( "demoT", "fY" );
sess.branchTTreeFloat( "demoT", "fZ" );
5 sess.setupTTree( "demoT" );
sess.fillBranchFloat( "demoT", "fZ", (float) r.
    nextGaussian() );
sess.fillBranchFloat( "demoT", "fX", (float) r.
    nextGaussian() );
sess.fillBranchFloat( "demoT", "fY", (float) r.
    nextGaussian() );
sess.fillTTree( "demoT" );
10 sess.delete();
```

# Example



(a) ROOT



(b) JAS3

Available to download from

<https://heplnm061.pp.rl.ac.uk/repos/javaROOT/trunk>