
Subject: Re: Different results for same information extracted in different ways
Posted by [Mamen](#) on Mon, 10 Nov 2014 15:41:04 GMT

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Dear All,

I'm getting more and more confuse about the behavior of root. In order to clarify how a histogram is filled using "->Project()" or looping over a TTree and using "->Fill()" I created a small macro:

```
// c/c++  
##include <stdlib.h>  
#include <iostream>  
  
//root  
  
#include "TFile.h"  
#include "TTree.h"  
#include "TH1D.h"  
#include "TH1F.h"  
  
void FillHisto_test(){  
    char Filename[256];  
    char *directionName;  
    char *Pi0FW;  
  
    double W2=5.;  
    int FW=1;  
    int NBINS=100;  
    int BINMIN=-2;  
    int BINMAX=2;  
  
    if(FW==0)  
    {  
        Pi0FW="bw";  
        directionName="backward";  
    }  
    else if (FW==1)  
    {  
        Pi0FW="fw";  
        directionName="forward";  
    }  
    sprintf(Filename,  
"/home/moraespi/VariableCosThetaGammaStar/Rootfiles/SimuJan2014/electrons/epempi0-W2  
-%.0f-Delta0-%s-LargeQ2-Merged.root", W2, Pi0FW);  
  
    cout << "File: "<< Filename<< endl;  
  
    // TCanvas *myCanvas;  
    // myCanvas=new TCanvas("C", "C", 1);
```

```

TFile *t=new TFile(Filename);

TTree *epempi0Tuple = (TTree*)t->Get("epempi0Tuple");

// // Project method
TH1D *Reco;
Reco = new TH1D ("Reco", "Reco", NBINS, BINMIN, BINMAX);
epempi0Tuple->Project("Reco", "feppx");//, "eppid>3");
// Reco->Draw();

double Total_int=0;
double Integral=0;
double GetEntries=0;
for (int i=0; i<NBINS+2; i++ )
{
    Total_int=Total_int+Reco->GetBinContent(i);
}

for (int j=1; j<NBINS+1; j++ )
{
    Integral=Integral+Reco->GetBinContent(j);
}
GetEntries=Reco->GetEntries();
cout << "Number of events in the Histogram using Project: "<<endl;
cout << " Total_int (0-9)\t Integral (1-8)\t GetEntries"<<endl;
cout << Total_int <<"\t\t\t" <<Integral<<"\t\t\t" <<GetEntries<<endl;
t->Close();

```

// // Branch Addresses method

```

TFile *t2=new TFile(Filename);

TTree *epempi0TupleReco = (TTree*)t2->Get("epempi0Tuple");

float feppx;
int eppid;

epempi0TupleReco->SetBranchAddress("feppx", &feppx);
epempi0TupleReco->SetBranchAddress("eppid", &eppid);

TH1F *Reco2;
Reco2 = new TH1F("Fill", "Fill", NBINS, BINMIN, BINMAX);

long NEntriesReco=(long)epempi0TupleReco->GetEntries();

double value=0;
for (int k=0; k<NEntriesReco; k++)
{
    epempi0TupleReco->GetEntry(k);
    if (k % 100000 == 0 && k != 0)
{

```

```

cout<<"*** Reco Loop *** Getting Entry: "<< k << endl;
}

// if (eppid>3)
// {
value=feppx;
Reco2->Fill(value);
// }
}

double Total_intFill=0;
double IntegralFill=0;
double GetEntriesFill=0;
for (int i=0; i<NBINS+2; i++ )
{
  Total_intFill=Total_intFill+Reco2->GetBinContent(i);

for (int j=1; j<NBINS+1; j++ )
{
  IntegralFill=IntegralFill+Reco2->GetBinContent(j);
}
GetEntriesFill=Reco2->GetEntries();

cout << "Number of events in the Histogram looping over TTree: "<< endl;
cout << " Total_intF (0-9)\t IntegralF (1-8)\t\t GetEntriesF"<< endl;
cout << Total_intFill <<"\t\t\t" <<IntegralFill<<"\t\t\t" <<GetEntriesFill<< endl;

// //myCanvas->cd();
// Reco2->SetLineColor(kRed);
// Reco2->Draw();
// //myCanvas->SaveAs("Test_Canvas.eps");

t2->Close();

}

```

As you can see, changing the value of "W2" and "FW" I can select which of the four root files to read:

epempi0-W2-10-Delta0-bw-LargeQ2-Merged.root
 epempi0-W2-10-Delta0-fw-LargeQ2-Merged.root
 epempi0-W2-5-Delta0-bw-LargeQ2-Merged.root
 epempi0-W2-5-Delta0-fw-LargeQ2-Merged.root

I have many problems with this little macro:

1.- If I run

> root FillHisto_test.C+

it crashes for all four root files.

2.- If I run:

```
> root FillHisto_test.C
```

it runs only for the file epempi0-W2-5-Delta0-fw-LargeQ2-Merged.root.

3.- I don't get the same number of events in the Histograms using ->Project() or looping over the TTree and doing ->Fill().

(I principally want to understand why, but problems 1.- and 2.- are difficulting me the process).

I am using the following root version:

```
*****
*          *
*      W E L C O M E   t o   R O O T   *
*          *
* Version 5.34/05 14 February 2013   *
*          *
* You are welcome to visit our Web site   *
*      http://root.cern.ch           *
*          *
*****
```

ROOT 5.34/05 (tags/v5-34-05@48582, Nov 05 2013, 17:07:52 on linuxx8664gcc)

CINT/ROOT C/C++ Interpreter version 5.18.00, July 2, 2010

Type ? for help. Commands must be C++ statements.

Enclose multiple statements between {}.

and I attach to this post:

a.- The macro FillHisto_test.C

b.- The four root files I want to read, can be found under:

<https://fileshare.zdv.uni-mainz.de/7IGNaukAXiRNxqfPERB7yw.repo>

Username: PandaRoot

Password: v3UyxFX8

c.- A file Output.txt with the outputs of the macro run with the four files, compiled and not compiled.

If somebody has any ideas, or can help me in some way, I would be very, very thankful.

Thanks a lot in advance.

Mamen

File Attachments

- 1) [FillHisto_test.C](#), downloaded 355 times
 - 2) [Output.txt](#), downloaded 391 times
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