Subject: loop over PndMcTracks
Posted by Yuri Naryshkin on Sat, 09 Nov 2013 15:07:04 GMT
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Hi, I produced sim_complete.root file with sim_complete.C example (using dpm generator) and try to use it for the Lambda analysis. I use example macro ana_Lambda.C, just slightly modofy it (attached). When I try to access MC track information I found out that fMcCands->GetEntriesFast() is equal to zero -> no loop over fMcCands. MCTrack tree is not enmpty. Could you please tell me what is wrong?

File Attachments
1) ana_Lambda.C, downloaded 527 times

Subject: Re: loop over PndMcTracks
Posted by StefanoSpataro on Sat, 09 Nov 2013 18:43:57 GMT
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```
TClonesArray *fMcCands=new TClonesArray("PndMCTrack");
t->SetBranchAddress("MCTrack",&fMcCands);
```

However your code is quite obsolete, I would suggest to check the latest tutorial wiki pages, since the analysis structure has changed.

Subject: Re: loop over PndMcTracks
Posted by Yuri Naryshkin on Sun, 10 Nov 2013 20:00:54 GMT
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Thank you Stefano! Now I use the latest version:
pandaroot/tutorials/apr13/
do simulation full chain with: tut_runall.sh
and analysis with tut_ana.C
I get information about MC track with:

```
// *** loop over MC track
for (jl=0;jl<mctrk.GetLength();++jl)
{
cout << "all MC tracks  " << jl
    << " " << mctrk[jl].PdgCode()
    << " " << mctrk[jl].Px()
    << endl;
}
```

But when I try to extract mother particle ID and StartX:

```
<< " " << mctrk[jl].MotherID();
<< " " << mctrk[jl].StartX();
```

it is the problem. Could you please tell me how I can get this?

Subject: Re: loop over PndMcTracks
Posted by StefanoSpataro on Sun, 10 Nov 2013 21:18:34 GMT
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What is the problem exactly? Which crash do you have?

Subject: Re: loop over PndMcTracks
Posted by Yuri Naryshkin on Mon, 11 Nov 2013 10:22:27 GMT
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Dear Stefano,
the piece of code is:

```
//YN
            // *** loop over MC track
            for (jl=0;jl<mctrk.GetLength();++jl)
            {
            cout << "all MC tracks  " << jl
                << " " << mctrk[jl].PdgCode()
                << " " << mctrk[jl].Px()
                << " " << mctrk[jl]->MotherID();
                << endl;
            }
//YN
```

the error message is:

```
************************************************************
    initialisation for run id 372981311
************************************************************
[ERROR  ] init() ANAPidSelections  not initialized
Error in <FairRuntimeDb::initContainers()>: Error occured during initialization
evt aaa1
[INFO   ] The number of entries in chain is 5000
Warning: wrong member access operator '->' tut_ana.C:140:
Error: Can't call TCandidate::MotherID() in current scope tut_ana.C:140:
Possible candidates are...
(in TCandidate)
(in TFitParams)
*** Interpreter error recovered ***
all MC tracks  0 211 -0.0498608 root [1]
```

Subject: Re: loop over PndMcTracks
Posted by StefanoSpataro on Mon, 11 Nov 2013 11:29:27 GMT
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It is ->GetMcMotherIdx().
For the startX I believe you should use ->Origin().).

Subject: Re: loop over PndMcTracks
Posted by Yuri Naryshkin on Mon, 11 Nov 2013 15:48:14 GMT
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Thank you very much Stefano! Working
I also would like to extract FtofPoint information in the same loop
over event (of course, loop over FtofPoints is defferent)

theAnalysis->FillList(ftof, "FtofPoint");

I've got an error message:

Error in <FillList>: Unknown list key: FtofPoint

Should I add some more classes or add something else?

Subject: Re: loop over PndMcTracks
Posted by StefanoSpataro on Fri, 15 Nov 2013 15:39:25 GMT
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Hi, PndAnalysis is written as framework to perform physics analysis (invariant mass distributions, fitters,etc...) and not for detector studies. The only think you can do there is, from the charged candidate, retrieve the Tof Index and from the index recover the FtofHit.

I can suggest you to take a look into the macro macro/pid/track_check.C.
This macro loops over MCTrack, select only primary particles (GetMotherID()==-1), and for each mctrack it find the pid candidate correlated to such track. This is a basic scheme, but if you substitute the names with ftof classes you can do whatever you want. Also the macro pid_check.c could help you to understand the mechanism (I am not tousching them since a while then maybe they could crash, but all the basics are inside).