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Subject: question about tagging events

Posted by [Alexandros](#) on Fri, 29 Aug 2014 13:21:54 GMT

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Hi,

I have a rather stupid question.

So, I am running some full simulations.

I want to compare some parameters(lets say mom, x position, etc) from the mc truth tree with the same parameters from my analysis tree..

The thing is that I want to compare these parameters for the same event number.

For example:

I simulate 10000 events and I get 6000 D0 in my analysis..

Is it possible to compare the parameters mentioned above for the same 6000 events both from my analysis and the mc truth??

I mean is there a tag somewhere so that the numbers I get are from the same event for both mc truth and analysis??

I hope you understood my question.

Thanks a lot

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Subject: Re: question about tagging events

Posted by [Elisabetta Prencipe \(2\)](#) on Fri, 29 Aug 2014 15:03:18 GMT

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Hi Alexandros,

if I understood well your question, you are looking for something like in /tutorial/rho/tut\_ana.C

```
for (j=0;j<jpsi.GetLength();++j)
{
    if (theAnalysis->McTruthMatch(jpsi[j]))
    {
        hjpgsim_reco->Fill( jpsi[j]->M() );
        hjpgsim_true->Fill( jpsi[j]->GetMcTruth()->M());
    }
}
```

Here the example is related to the J/psi mass, reconstructed through pi+ pi-. jpsi = name of the combined list pi+ + pi-. hjpgsim\_reco and hjpgsim\_true are 2 histograms.

Is this what you asked?

[...there are never stupid questions )

cheers, Elisabetta

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Subject: Re: question about tagging events

Dear Alexandros,

the analysis framework (to be more precise PndAnalysis) provides a methode to do an MC truth match, i.e. to find the candidate in the MC truth list matching your reco'd candidate in case it was reconstructed properly. You can take a look here how it can be done:  
<https://subversion.gsi.de/trac/fairroot/browser/pandaroot/trunk/macro/scrut/PndScrutAnaTask.cxx#L203>

Using that you can directly plot the true quantity against/together with the reconstructed quantity.

Best,  
Klaus

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