
Subject: PndKinVtxFitter Resoultion

Posted by [Simone Esch](#) on Mon, 29 Jul 2013 12:57:47 GMT

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Hello!

I tried to do a resolution plot for my PndKinVtxFitter Vertex Resolution.

If I understand correctly the distance is in cm. If this is true I have a vertex resolution in the order of mm which is in my opinion really bad.

Maybe I compare the wrong values with each other. Can someone have a look at my code?

Best regards

Simone

What I did:

```
lambda2.Cleanup();
lambda2.Combine(protonplus, pionminus); // Daughter 0 proton, Daughter 1 pion
lambda2.SetType(3122);

// ****
// PndKinVtxFitter
// ****
double smallestchi2 =100000000000;
int indexofsmallestchi2 =-1;
RhoCandidate* lambdaPndKinVtxFitterfit;

for(int k=0;k < lambda2.GetLength();k++)
{
    PndKinVtxFitter kinvtxfitter(lambda2[k]);
    kinvtxfitter.AddMassConstraint(1.115);
    kinvtxfitter.Fit();
    if(kinvtxfitter.GetChi2()< smallestchi2 && kinvtxfitter.GetChi2() > 0)
    {
        smallestchi2= kinvtxfitter.GetChi2();
        indexofsmallestchi2=k;
        lambdaPndKinVtxFitterfit=lambda2[k]->GetFit();
        std::cout << "smallest chi2 " << smallestchi2<< std::endl;
    }
}

if(indexofsmallestchi2!=-1)
{
fLambdaMassPndKinVtxFitter->Fill((lambdaPndKinVtxFitterfit->Daughter(0)->P4())+lambdaPnd
KinVtxFitterfit->Daughter(1)->P4()).M());
fLambdaMassPndKinVtxFitterChi2->Fill(smallestchi2);

fPndKinVtxFitter_VertexRes_X->Fill(lambdaPndKinVtxFitterfit->Daughter(0)->GetPosition().X()
-lambda2[indexofsmallestchi2]->Daughter(0)->GetMcTruth()->GetPosition().X());
```

```
fPndKinVtxFitter_VertexRes_Y->Fill(lambdaPndKinVtxFitterfit->Daughter(0)->GetPosition().Y()-lambda2[indexofsmallestchi2]->Daughter(0)->GetMcTruth()->GetPosition().Y());  
fPndKinVtxFitter_VertexRes_Z->Fill(lambdaPndKinVtxFitterfit->Daughter(0)->GetPosition().Z()-lambda2[indexofsmallestchi2]->Daughter(0)->GetMcTruth()->GetPosition().Z());  
}
```

File Attachments

- 1) [resx.png](#), downloaded 511 times
 - 2) [resy.png](#), downloaded 599 times
 - 3) [resz.png](#), downloaded 614 times
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