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Subject: PndKinVtxFitter Resoulution

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); // Daugther 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

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- 1) [resx.png](#), downloaded 507 times
  - 2) [resy.png](#), downloaded 597 times
  - 3) [resz.png](#), downloaded 611 times
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