
Subject: Re: Chi2 of kinematic and vertex fitters

Posted by [Jennifer Pütz](#) on Mon, 06 Jul 2015 12:56:09 GMT

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Ok, here is an example with negative Chi2 for the 4C-Fit (pbar p -> Lambda0 + AntiLambda0)

```
double pbarmom = 1.712;
double p_m0 = TDatabasePDG::Instance()->GetParticle("proton")->Mass();
TLorentzVector ini (0,0, pbarmom, sqrt(p_m0*p_m0+ pbarmom*pbarmom)+p_m0);

RhoCandList piplus, piminus, lambda0, antiLambda0, proton, antiProton, pbarpsystem,
Lambda0Fit, AntiLambda0Fit;

TString PidSelection = "PidAlgoIdealCharged";

theAnalysis->FillList(piminus, "PionAllMinus", PidSelection);
theAnalysis->FillList(piplus, "PionAllPlus", PidSelection);
theAnalysis->FillList(proton, "ProtonAllPlus", PidSelection);
theAnalysis->FillList(antiProton, "ProtonAllMinus", PidSelection);

int evt=0;
while (theAnalysis->GetEvent() && ++evt<nevt){

/***/Lambda0 -> PiMinus + Proton
lambda0.Combine(piminus,proton);
lambda0.Select(lambdaMassSelector);
lambda0.SetType(3122);

for (int j=0; j<lambda0.GetLength(); ++j){

    PndKinVtxFitter vertexfitterLambda0 (lambda0[j]);
    vertexfitterLambda0.Fit();
    RhoCandidate * lambda0Fit = lambda0[j]->GetFit();
    Lambda0Fit.Append(lambda0Fit);

}

/***/AntiLambda0 -> PiMinus + Proton
antiLambda0.Combine(piplus,antiProton);
antiLambda0.Select(lambdaMassSelector);
antiLambda0.SetType(-3122);

for (int j=0; j<antiLambda0.GetLength(); ++j){
    PndKinVtxFitter vertexfitterAntiLambda0 (antiLambda0[j]);
    vertexfitterAntiLambda0.Fit();
    RhoCandidate * antiLambda0Fit = antiLambda0[j]->GetFit();
    AntiLambda0Fit.Append(antiLambda0Fit);
```

```

}

pbarpsystem.Combine(Lambda0Fit, AntiLambda0Fit);
pbarpsystem.SetType(88888);

for (int j=0; j<pbarpsystem.GetLength(); ++j){
  PndKinFitter Fitter4c (pbarpsystem[j]);
  Fitter4c.Add4MomConstraint(ini);
  Fitter4c.Fit();
}

Lambda0Fit.Cleanup();
AntiLambda0Fit.Cleanup();
}
-----

```

File Attachments

1) [4C_negative_chi2.png](#), downloaded 548 times

