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Subject: Re: Eta Prime decay via rho dilepton

Posted by Michael Kunkel on Sun, 25 Aug 2013 23:17:55 GMT

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I worked around it by

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##include "loadPluto.h";
//Author Michael C. Kunkel
#include "TH1.h"
#include "TH2.h"
#include "TH3.h"
#include "TChain.h"
#include "TCanvas.h"
#include "TF1.h"
#include "/Users/Mike/Pluto/pluto_v5.42/src/PParticle.h"
#include "/Users/Mike/Pluto/pluto_v5.42/src/PReaction.h"
#include "/Users/Mike/Pluto/pluto_v5.42/src/PBeamSmearing.h"
#include "/Users/Mike/Pluto/pluto_v5.42/src/PAnyDistribution.h"

void SIMULATE_EtaPrime_Dalitz(){
Double_t m_rho = makeStaticData()->GetParticleMass("rho0");
makeStaticData()->AddParticle(-1,"X", m_rho);
makeStaticData()->AddDecay(-1,"X -> pi+ + pi-", "X", "pi+,pi-", 1.);
//makeStaticData()->AddDecay(-1, "eta' -> rho0 + dilepton ", "eta'", "rho0,dilepton",0.0009);
makeStaticData()->AddDecay(-1, "eta' -> X + dilepton ", "eta'", "X,dilepton",0.0009);

//TF1 object representing the di-lepton statistics:
TF1 *flat = new TF1("flat","1",0,1);

//The "PInclusiveModel" can be used as a generator:
PInclusiveModel *dilepton_generator = new
PInclusiveModel("flat@eta'_to_rho0_dilepton/generator", "Dilepton generator", -1);

//The distribution template:
dilepton_generator->Add("eta',parent");
dilepton_generator->Add("X,daughter");
dilepton_generator->Add("dilepton,daughter,primary");
dilepton_generator->SetSampleFunction(flat);

//Enable distribution as a generator
//dilepton_generator->EnableGenerator();
makeDistributionManager()->Add(dilepton_generator);

double ebeam_min = 1.1725;
double ebeam_max = 5.44575;
PBeamSmearing *beam_smear = new PBeamSmearing("beam_smear", "Beam smearing");
TF1* beam_smear_fn = new TF1("beam_smear_fn", "1./x", ebeam_min, ebeam_max);

beam_smear->SetReaction("g + p");
beam_smear->SetMomentumFunction(beam_smear_fn);
makeDistributionManager()->Add(beam_smear);
```

```

gROOT->Reset();
//PUtils::SetSeed(123); //this is to have a fixed SEED. By default, the systime is used.....

PReaction my_reaction("_P1 = 2.2","g","p","p eta' [dilepton [e+ e-] X [pi+
pi-]]","etaP_Aphi",1,0,1,1);

TH1F * histo2 = new TH1F ("histo2","IM e+ e-",100,0.0,0.4);
TH1F * histo3 = new TH1F ("histo3","IM pi+ pi-",100,0.0,1);

my_reaction.Preheating(100);

my_reaction.Do(histo2,"_w =1;_x = ([dilepton])->M() ");
my_reaction.Do(histo3,"_w =1;_x = ([pi+] + [pi-])->M() ");
my_reaction.Loop(10000);

TCanvas *c1 = new TCanvas("c1","c1");
c1->Divide(1,2);
c1->cd(1);
histo2->Draw();
c1->cd(2);
histo3->Draw();
c1->Print("mass_spectrum_nodilep_dist.jpeg");

}


```

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