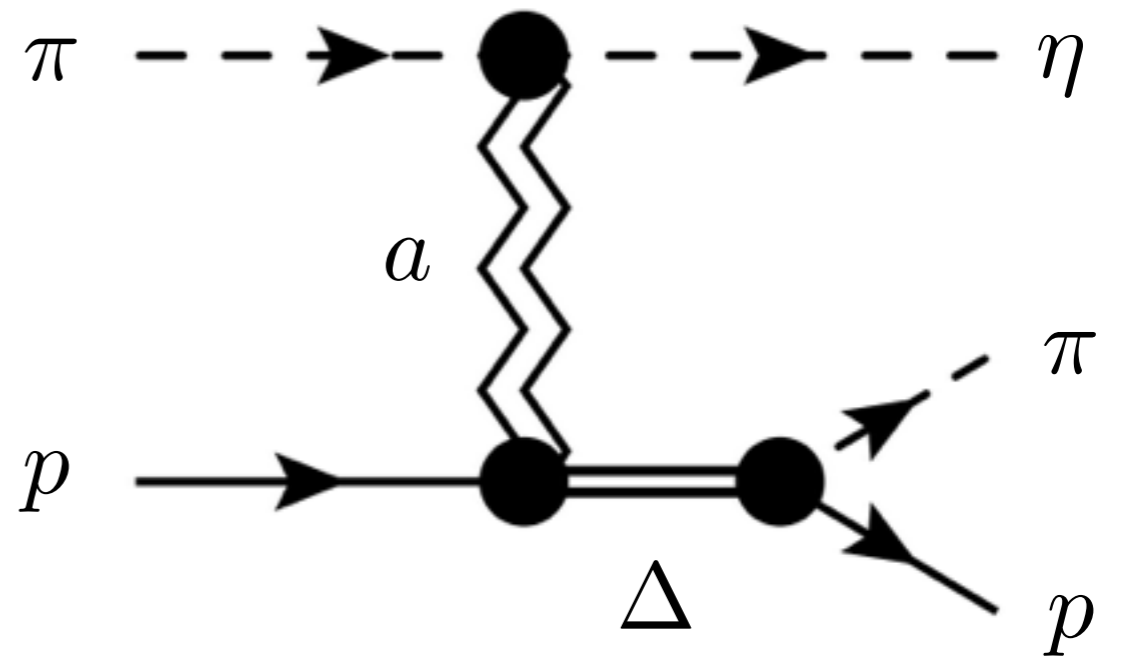
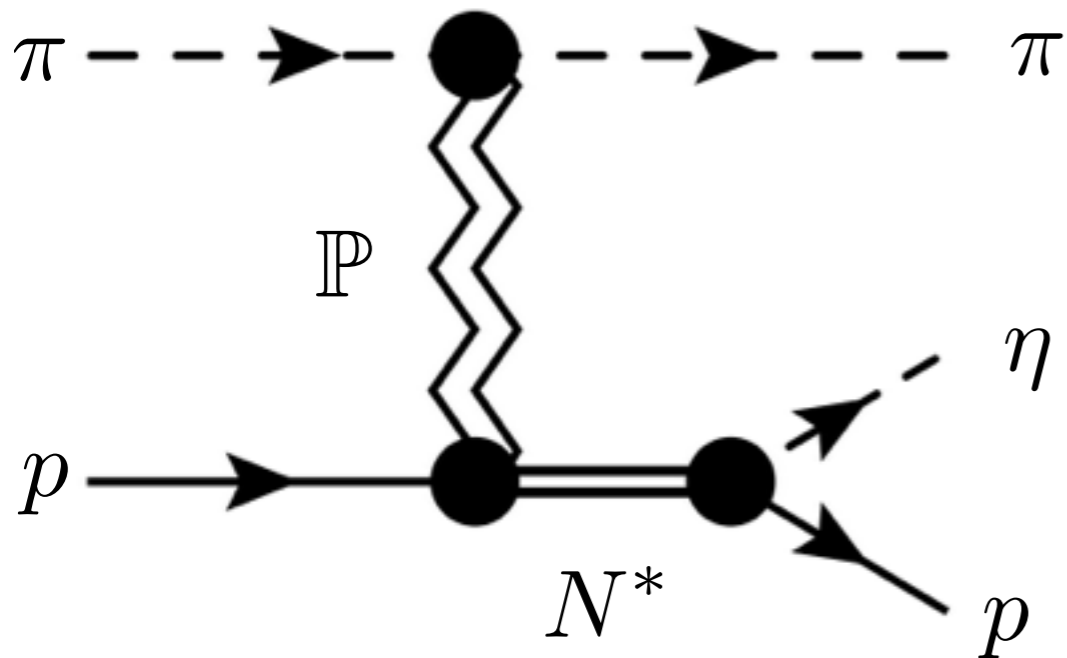


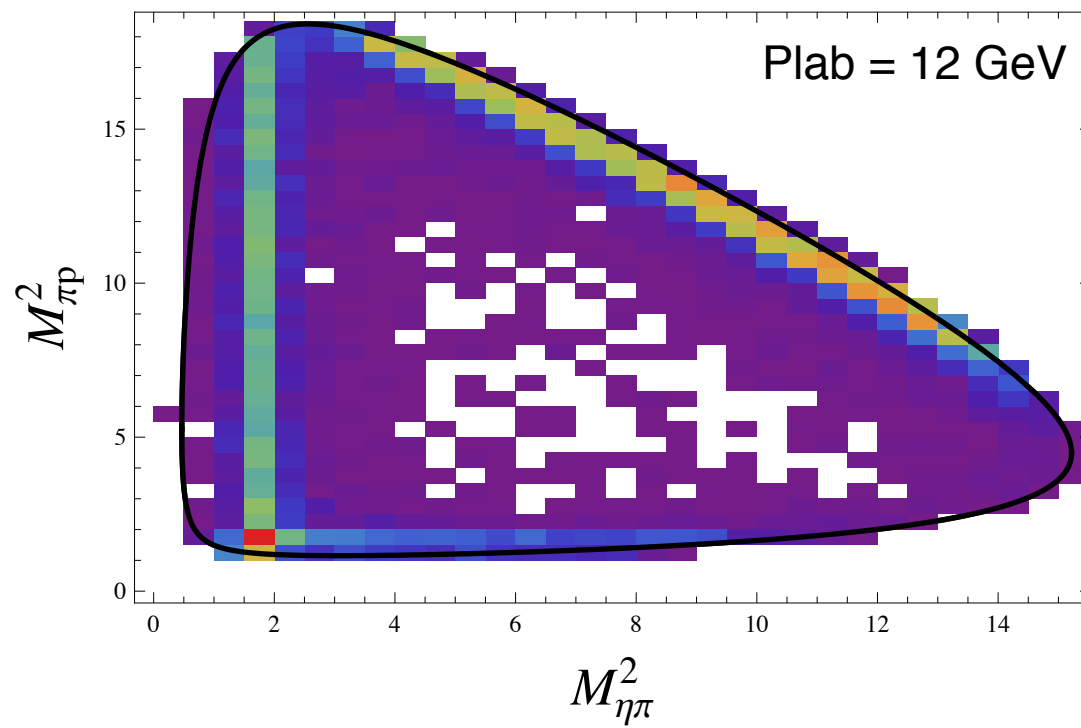
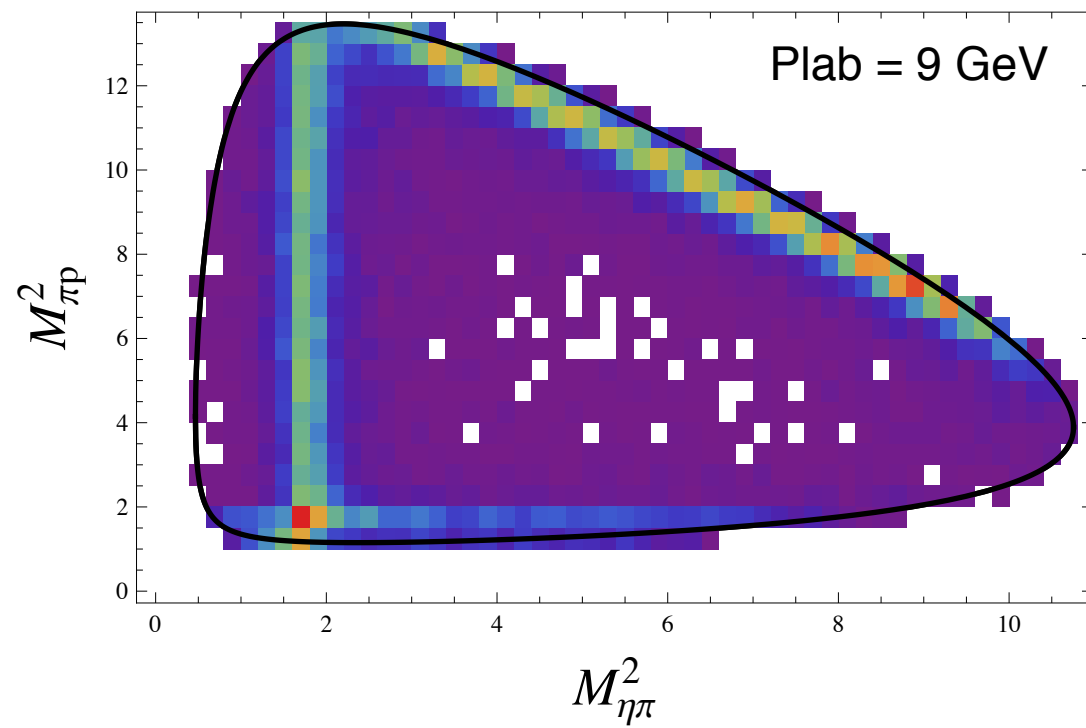
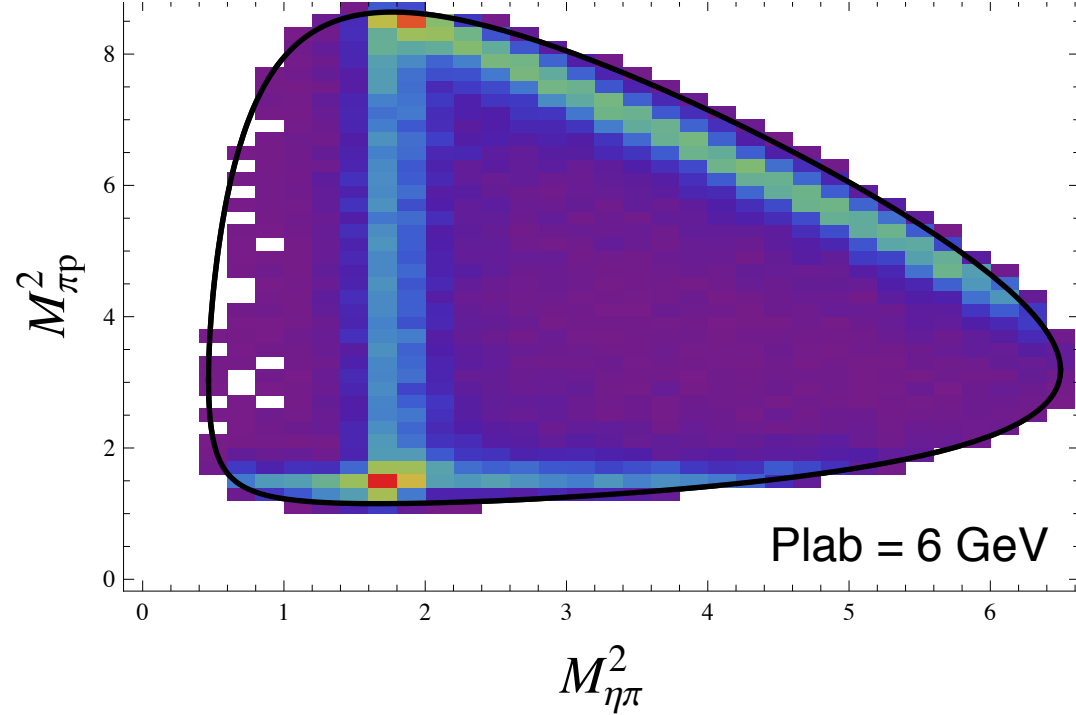
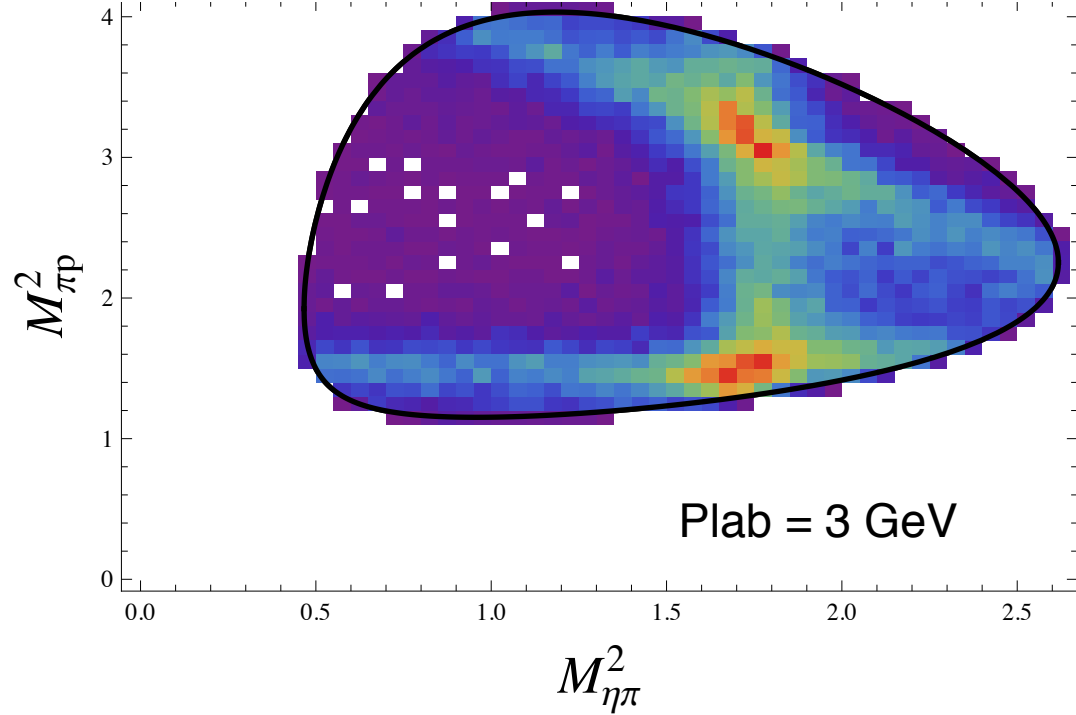
$$A_{a_2} = \frac{5s^{0.5+0.9u_p}}{s_{\eta\pi} - M_{a_2}^2 + iM_{a_2}\Gamma_{a_2}}$$

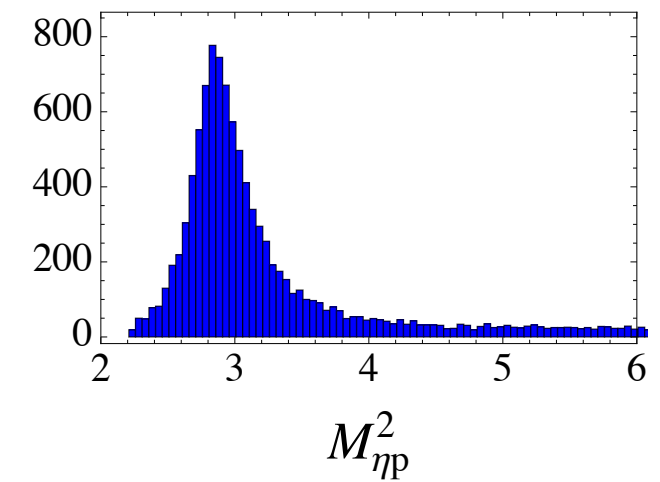
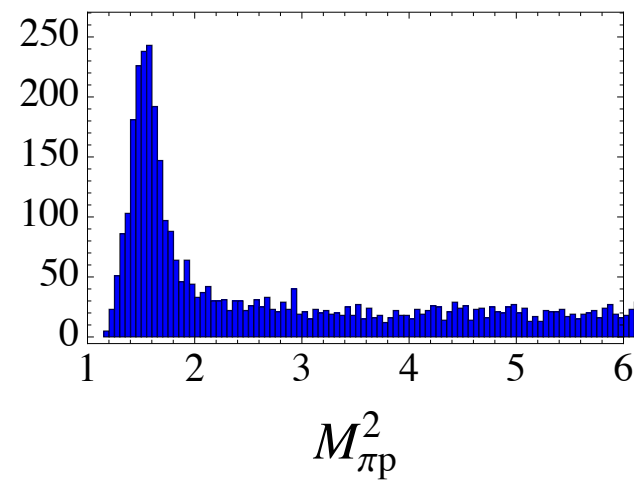
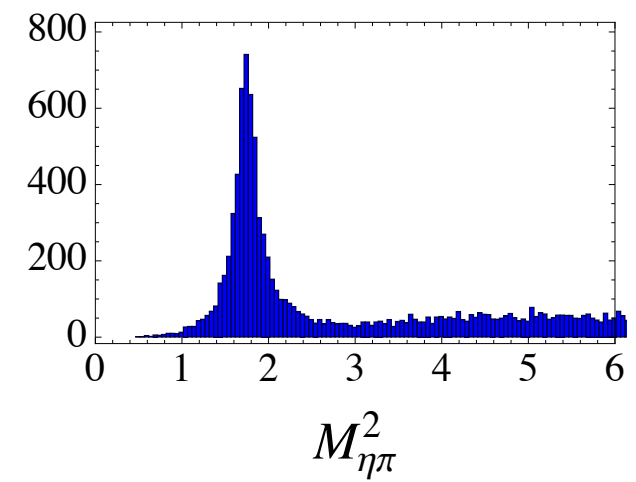
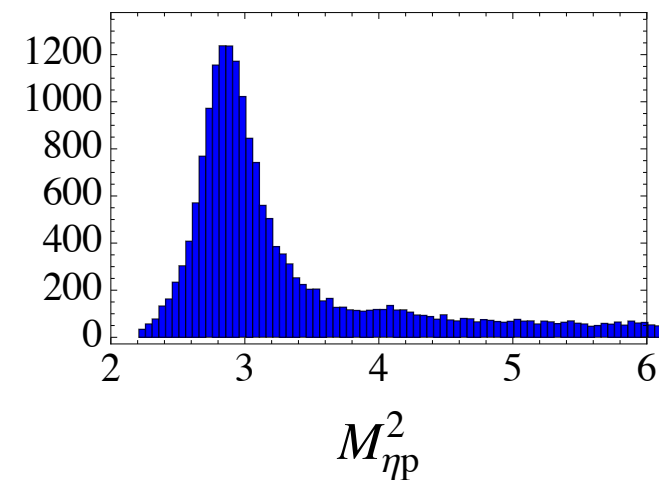
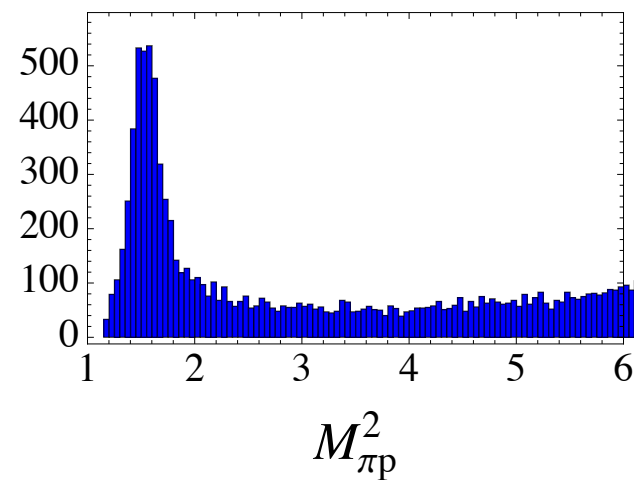
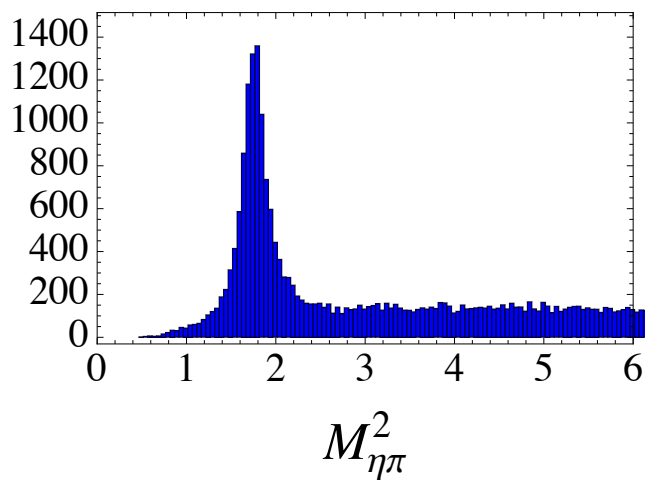
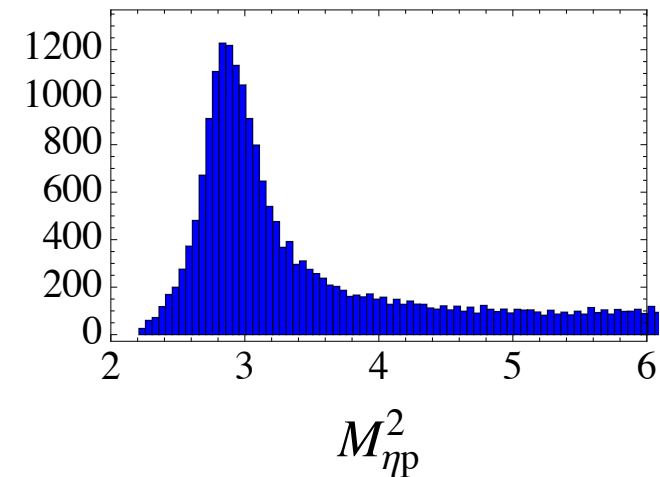
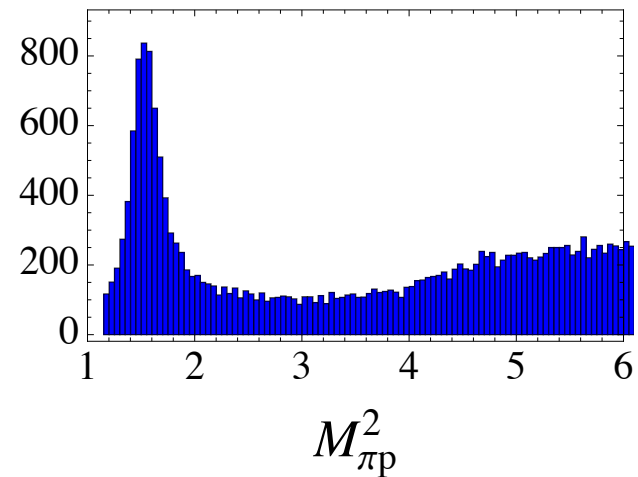
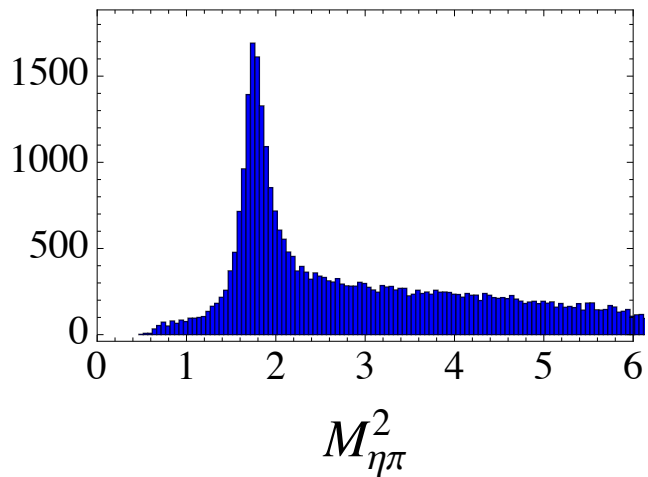
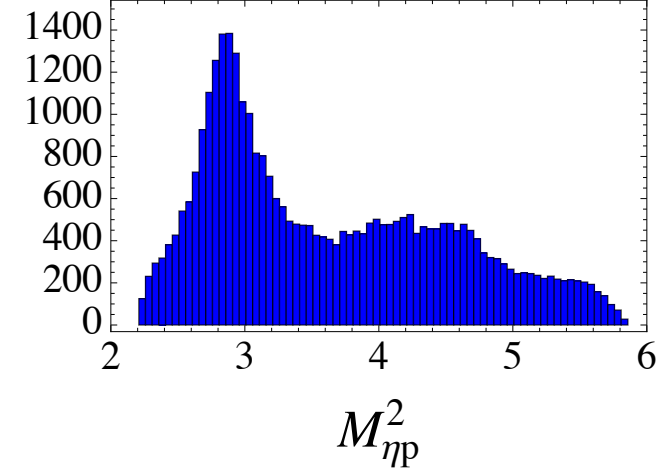
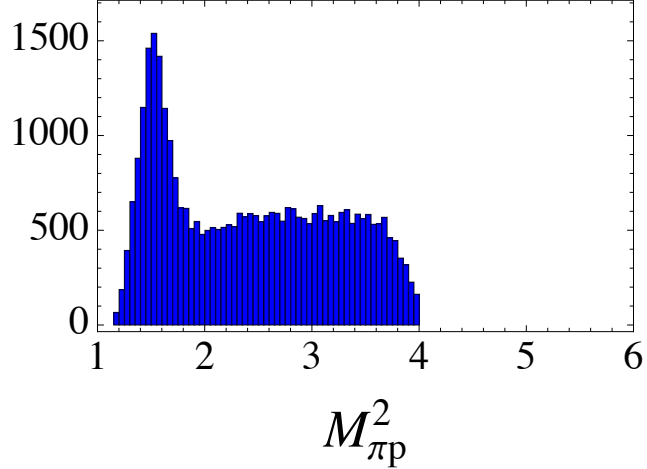
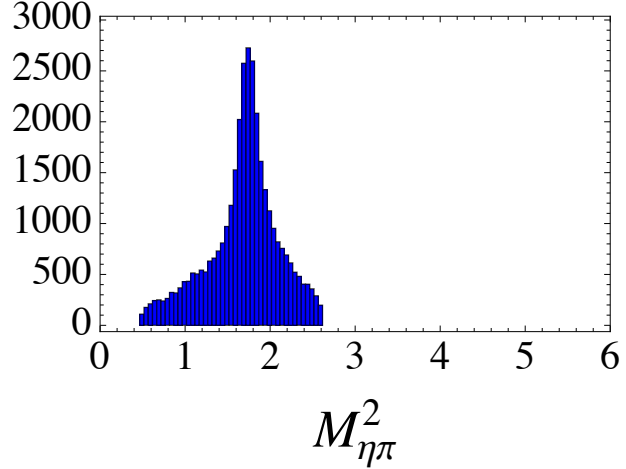
$$A_{N^*} = \frac{s^{1.08+0.2t_\pi}}{s_{\eta p} - M_{N^*}^2 + iM_{N^*}\Gamma_{N^*}}$$

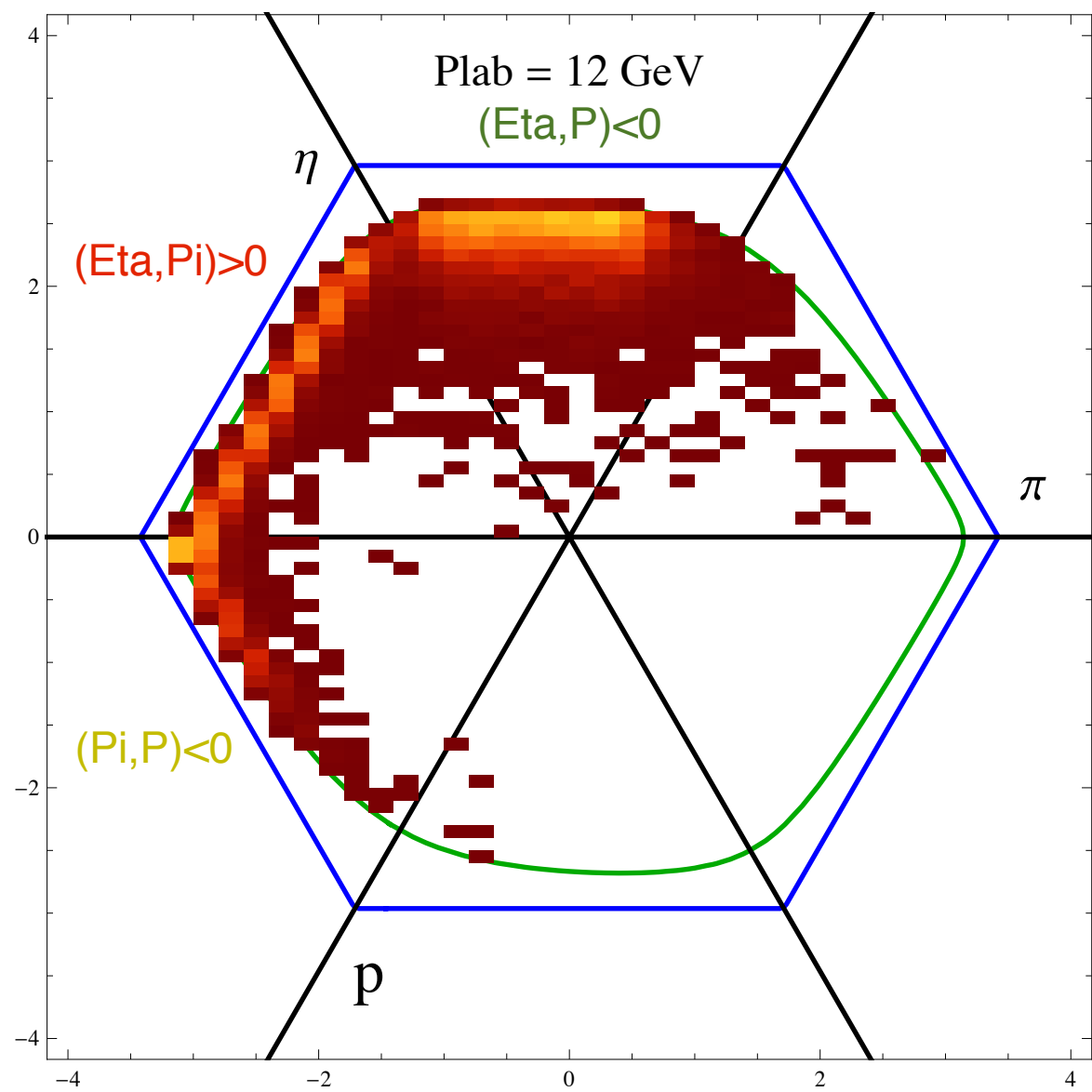
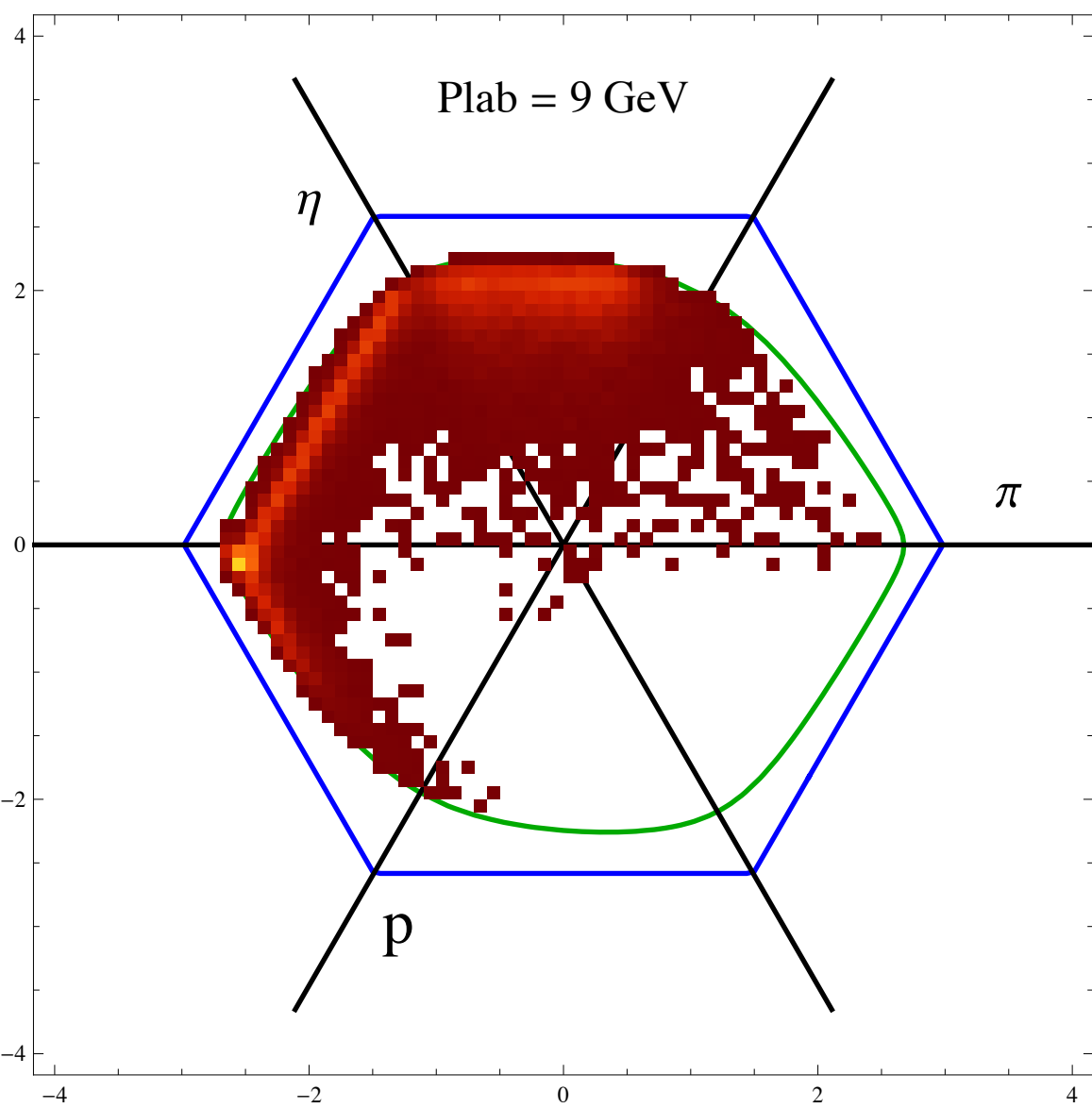
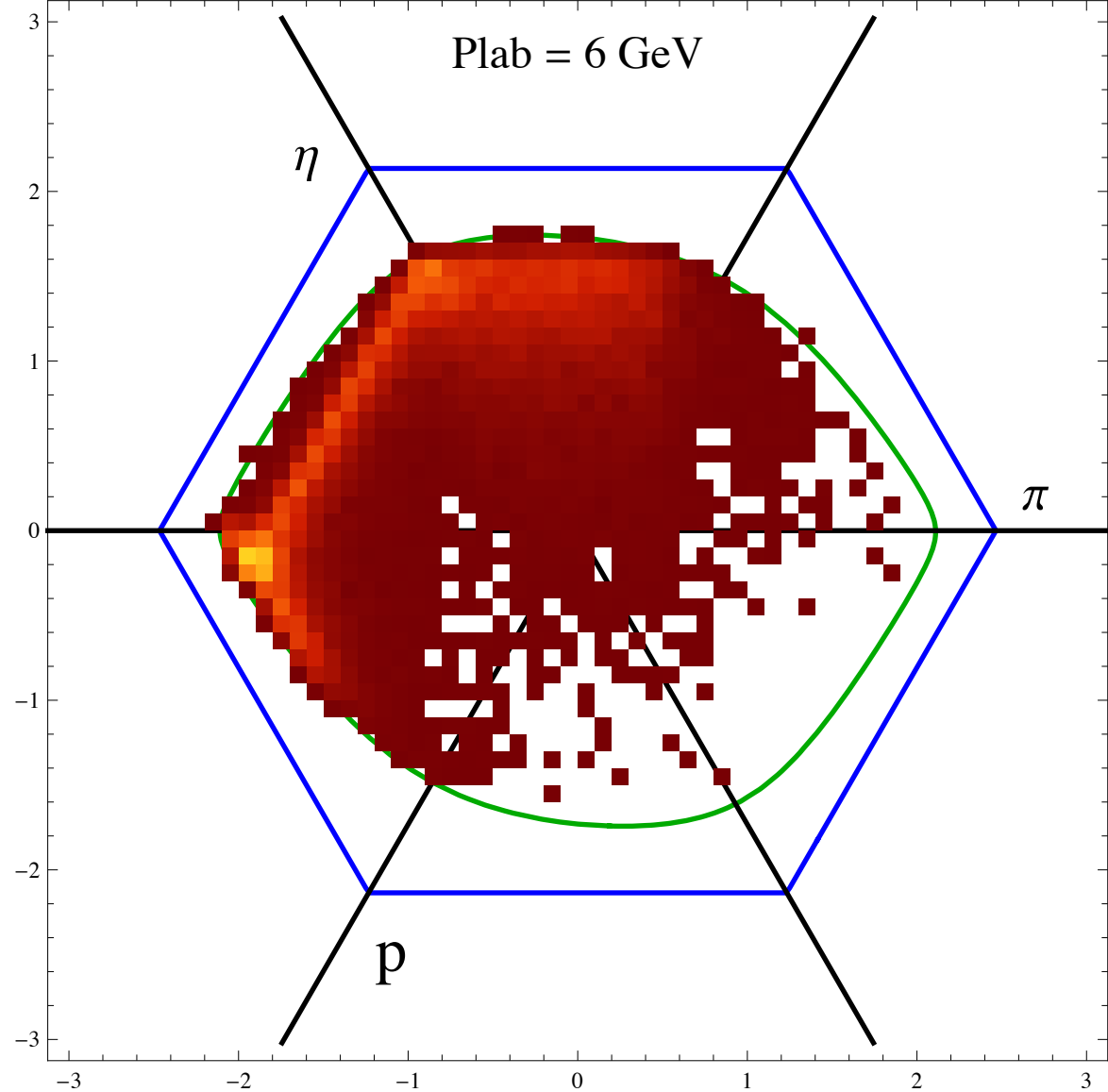
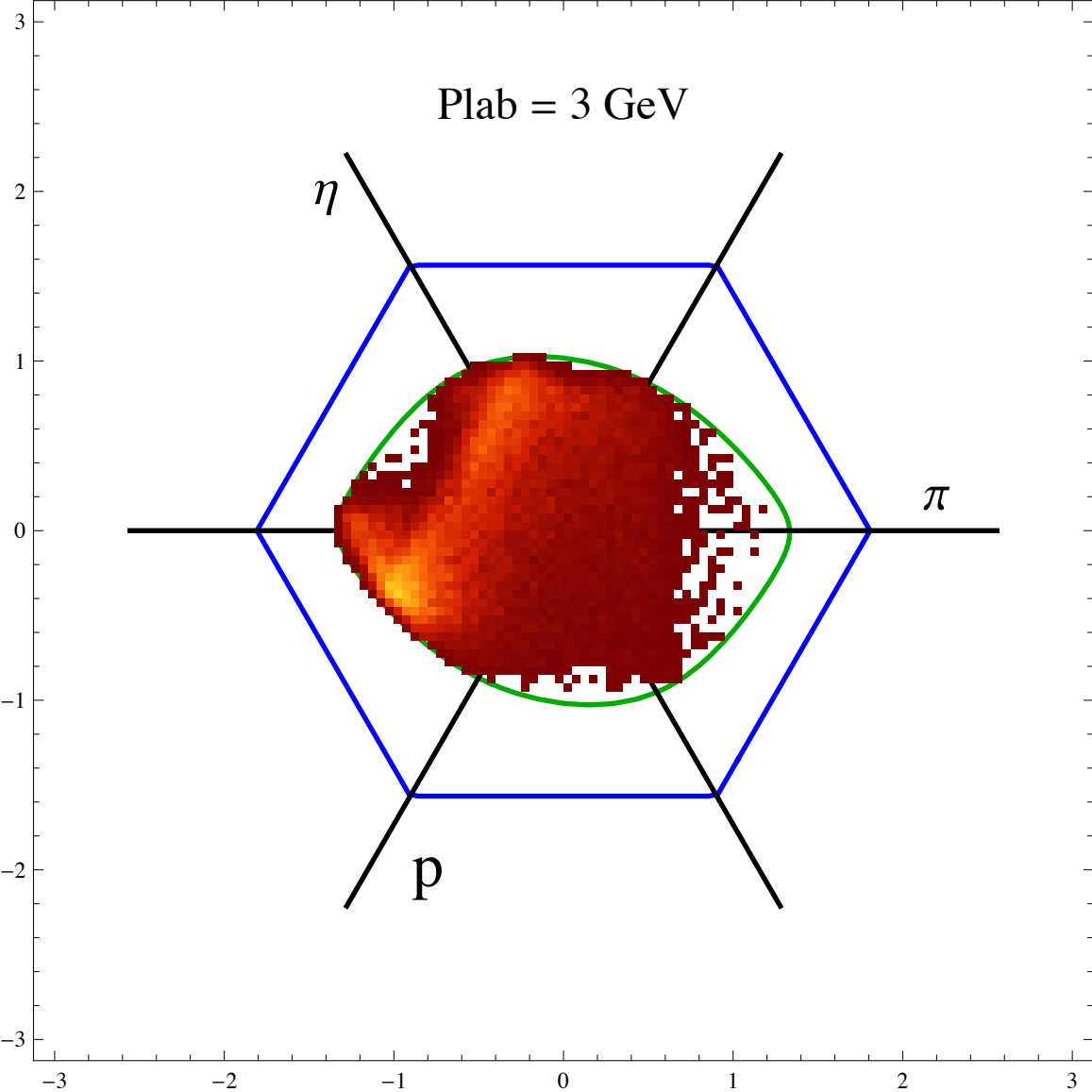
$$A_\Delta = \frac{5s^{0.5+0.9t_\eta}}{s_{\pi\pi} - M_\Delta^2 + iM_\Delta\Gamma_\Delta}$$

$$t_x = (p_{\text{beam}} - p_x)^2 \quad u_x = (p_{\text{target}} - p_x)^2$$





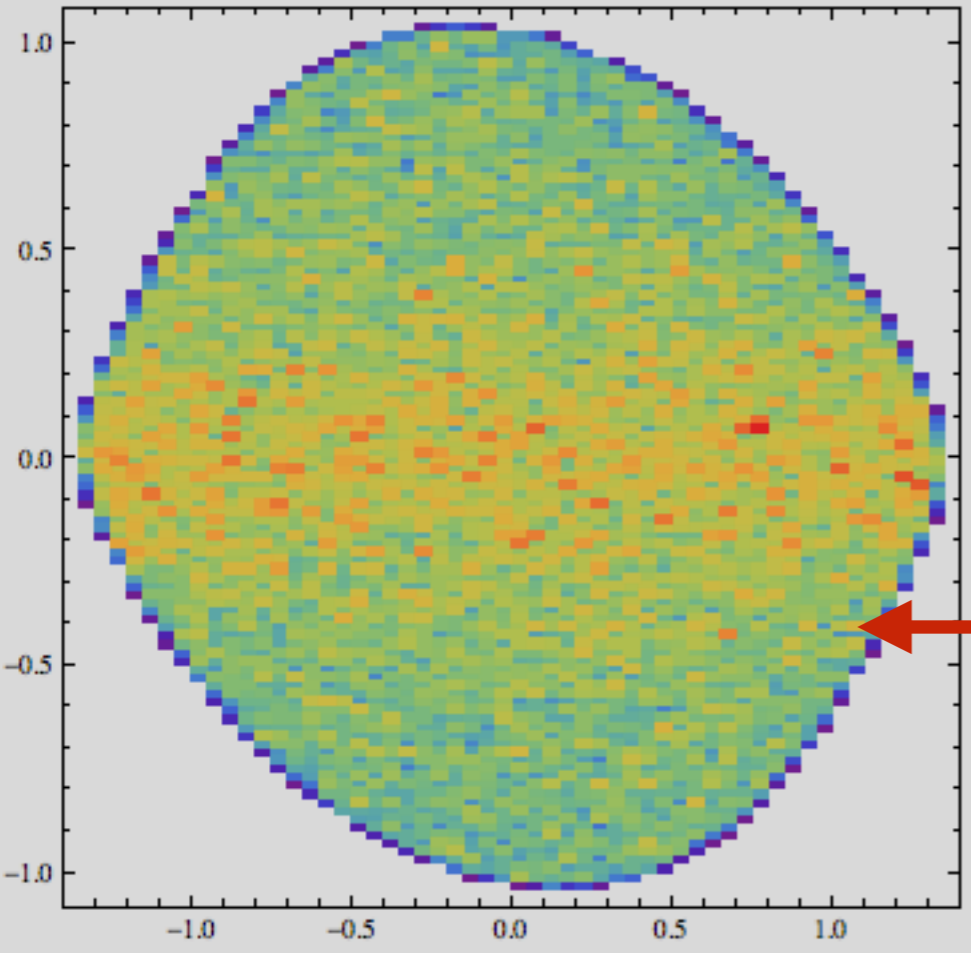




Van Hove Plot: Phase Space

```

Nmax = 150000;
Mass = {MPI, MP, META, MPI, MP};
plab = 12; Allevents = Table[Gen3COM[plab, Mass], {i, Nmax}];
{ηZ, πZ, pZ} = Boost[Allevents, plab];
funω[q_, ηZ_, πZ_, pZ_] := ArcTan[-(ηZ - pZ) / Sqrt[3], πZ];
q = Sqrt[πZ^2 + ηZ^2 + pZ^2];
ω = Table[funω[q[[i]], ηZ[[i]], πZ[[i]], pZ[[i]]], {i, Nmax}];
vhflatB = Table[{q[[i]] Cos[ω[[i]]], q[[i]] Sin[ω[[i]]]}, {i, Nmax}];
lplotB12 = DensityHistogram[vhflatB, ColorFunction -> "Rainbow"]
    
```



150k events
flat phase space

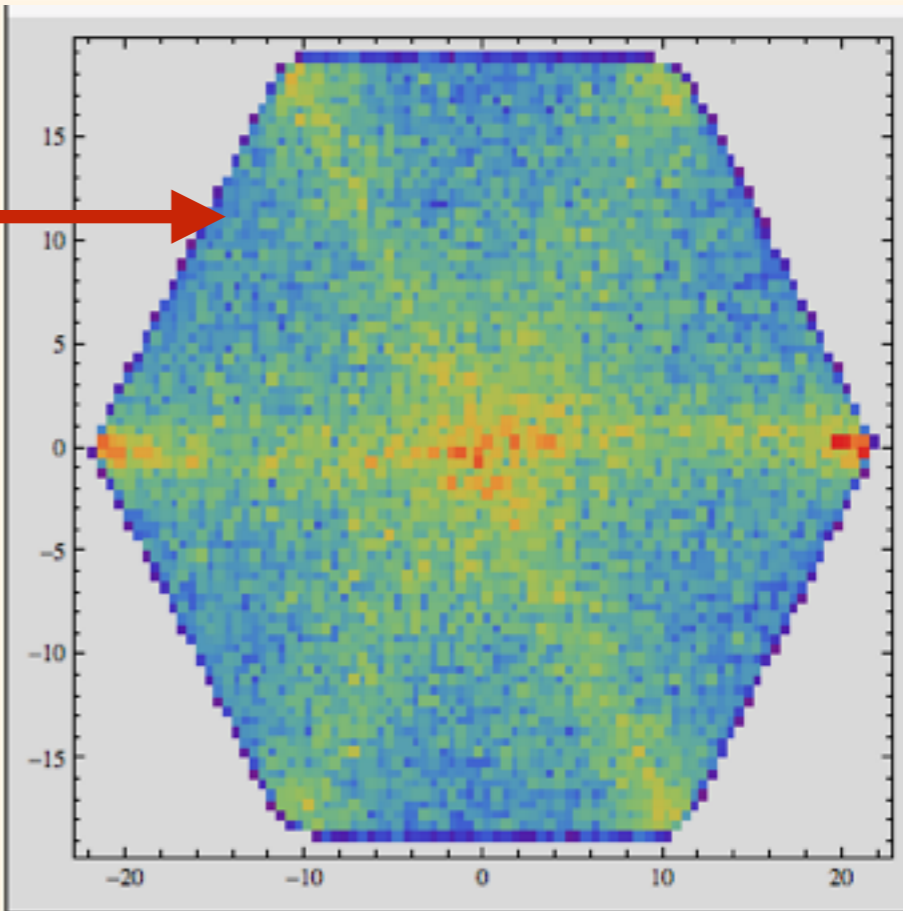
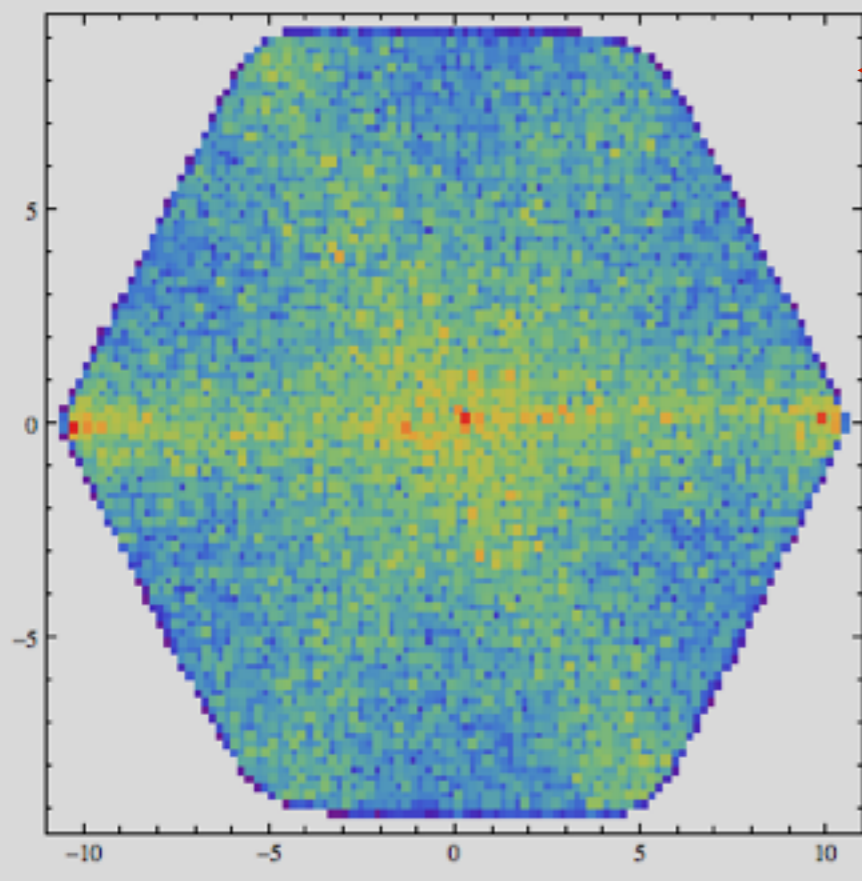
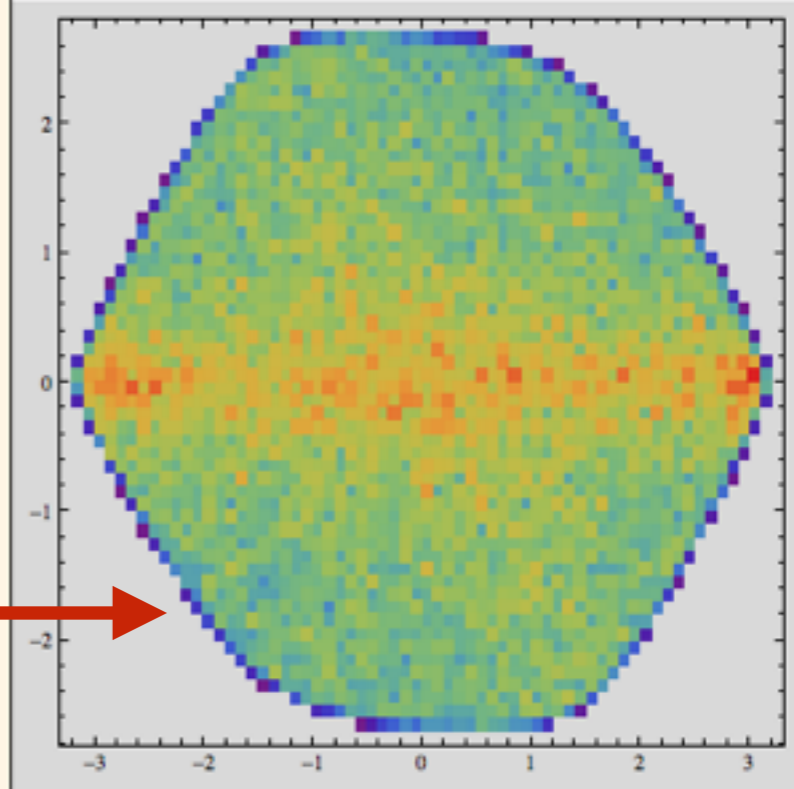
Plab =

3 GeV

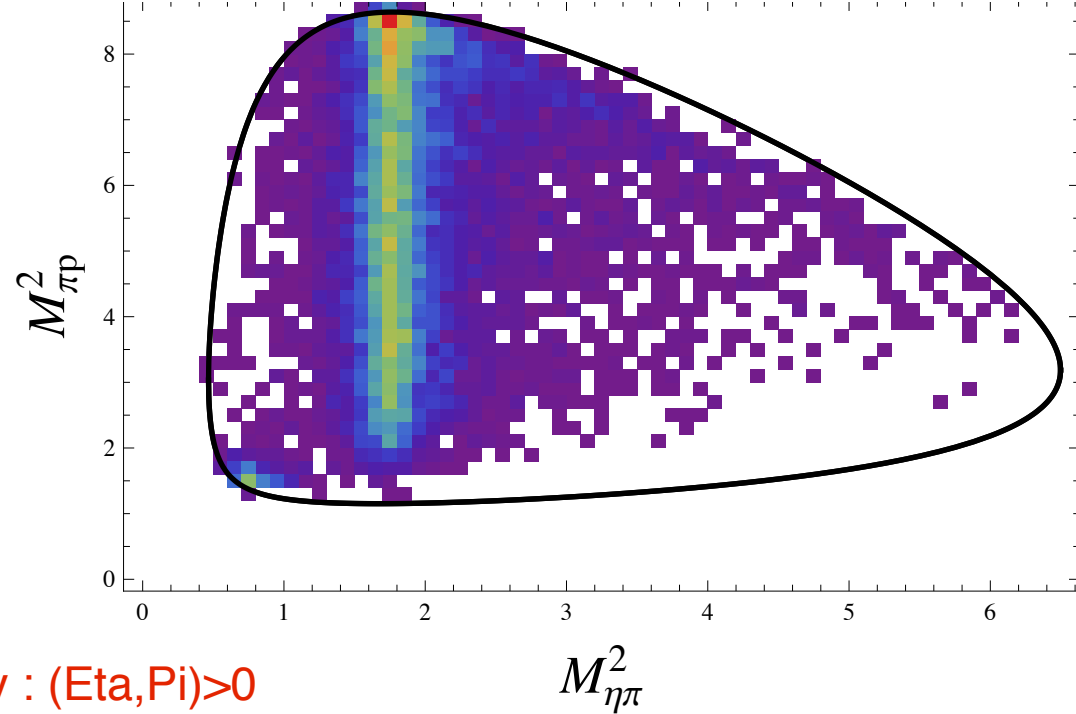
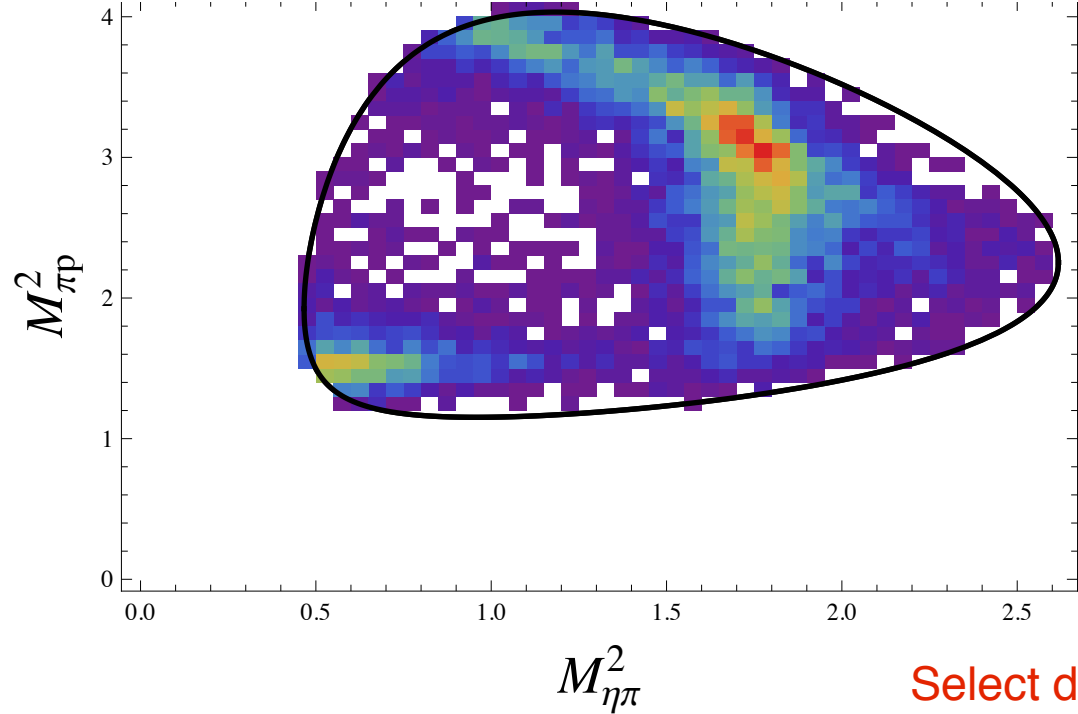
12 GeV

120 GeV

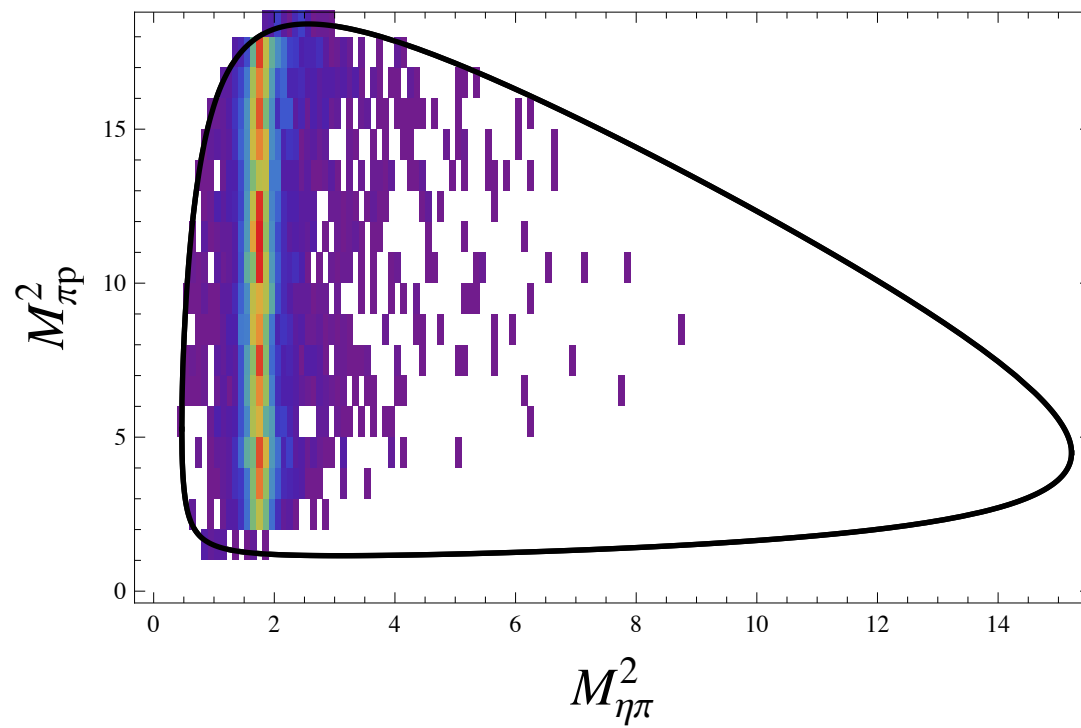
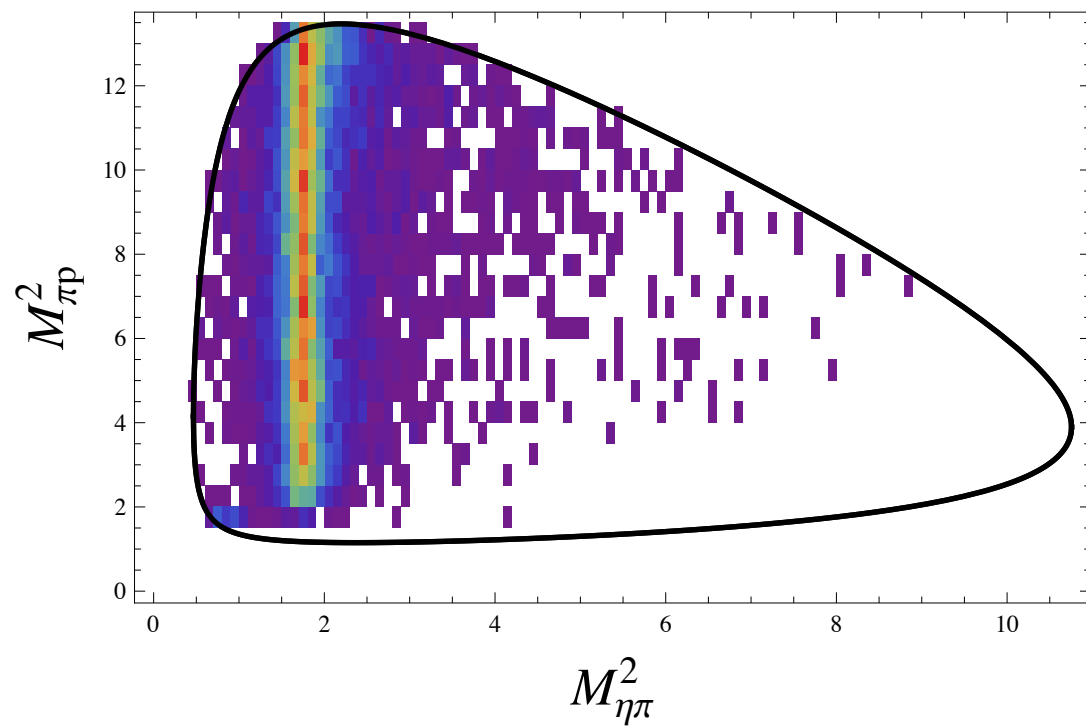
500 GeV

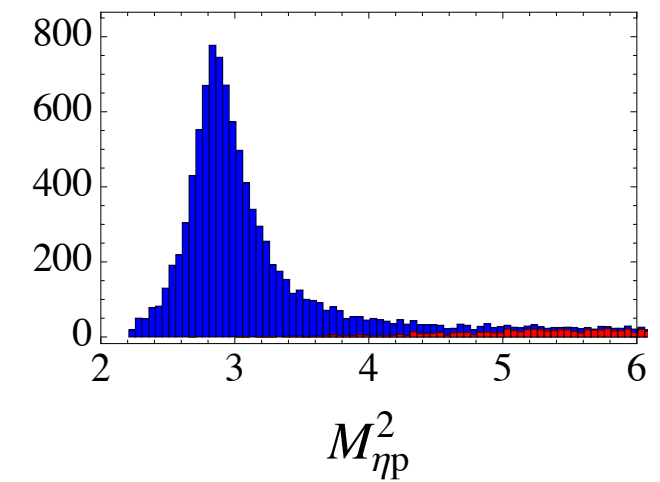
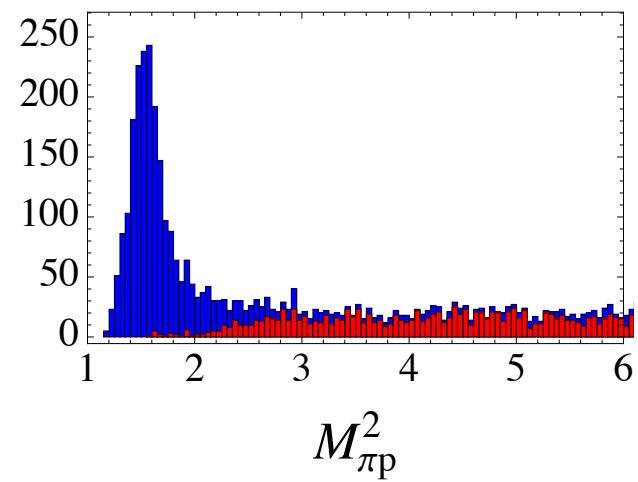
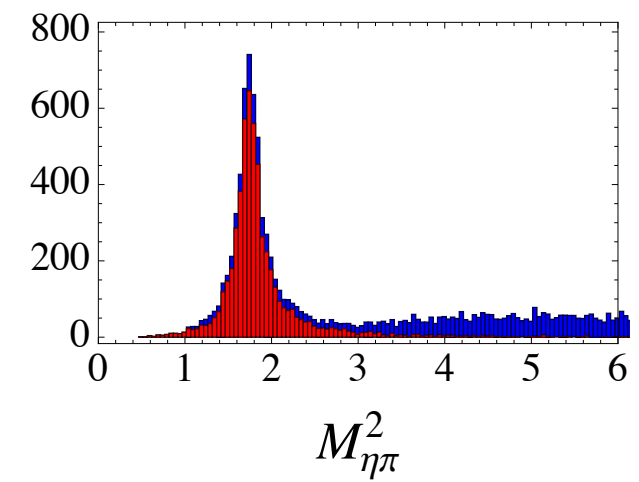
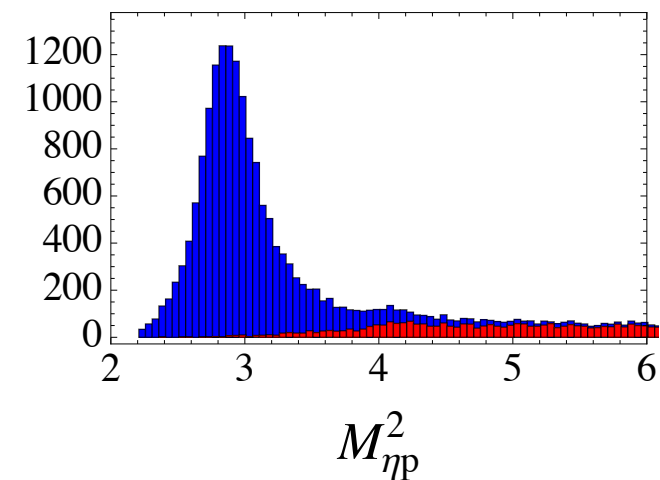
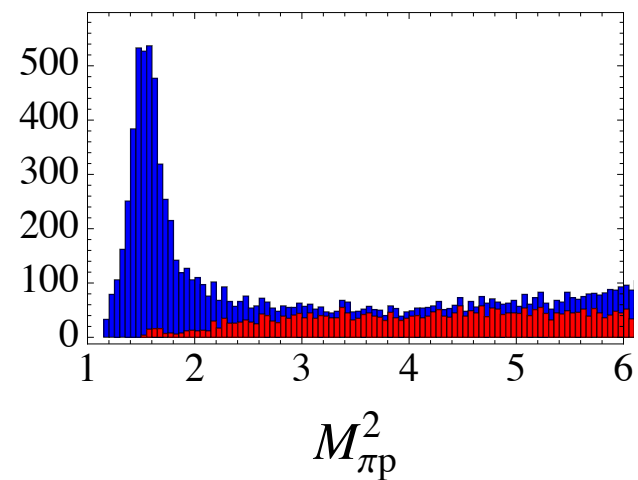
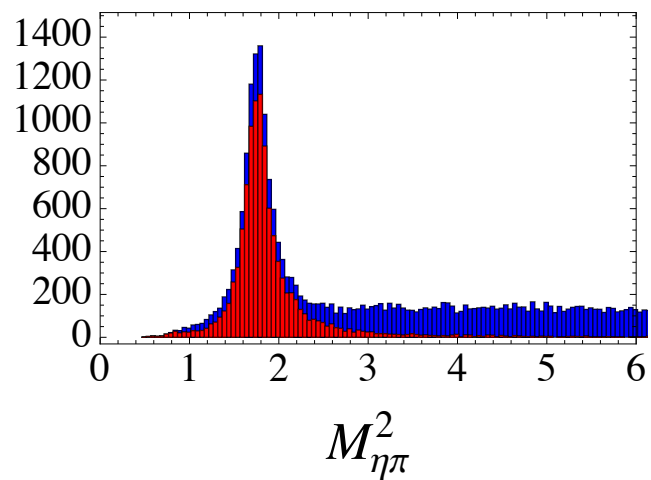
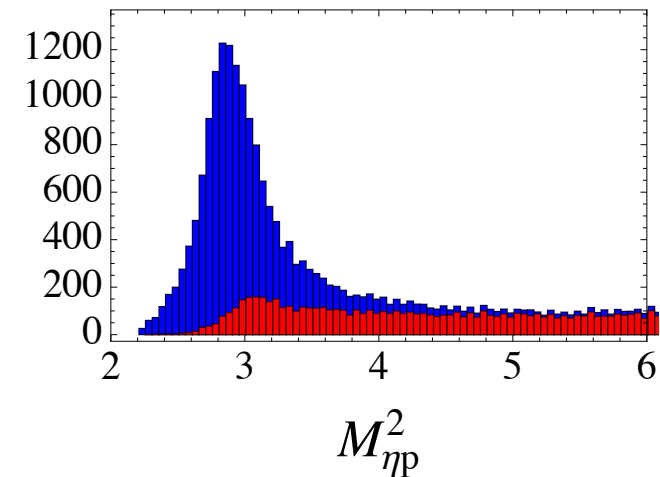
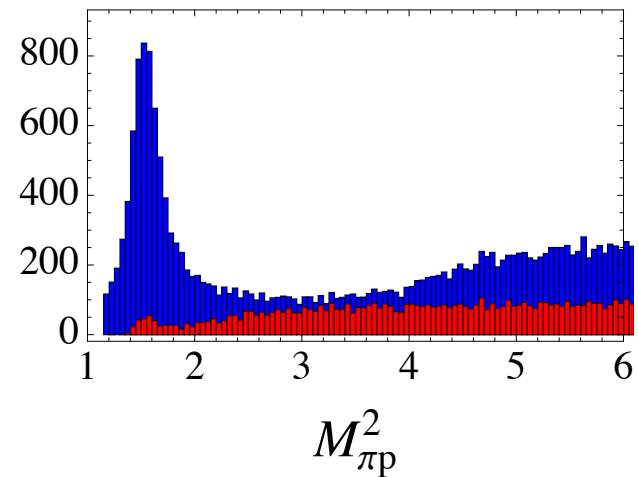
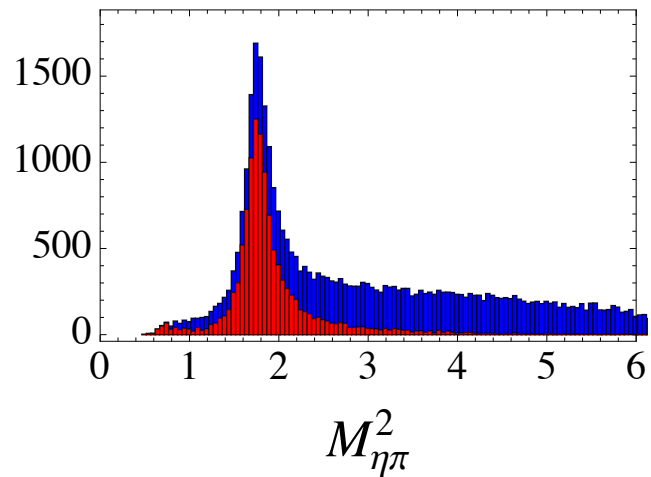
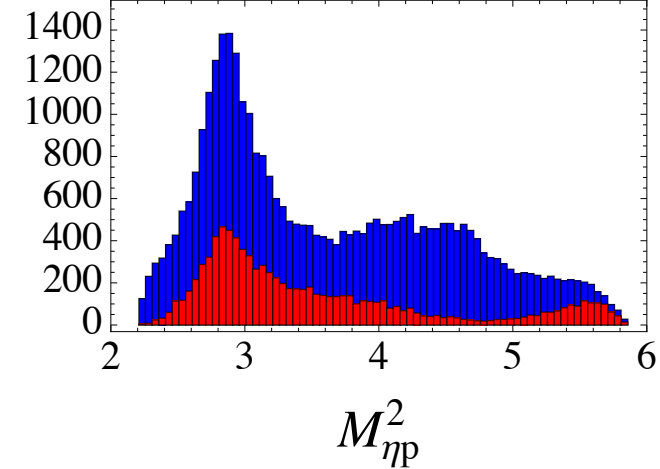
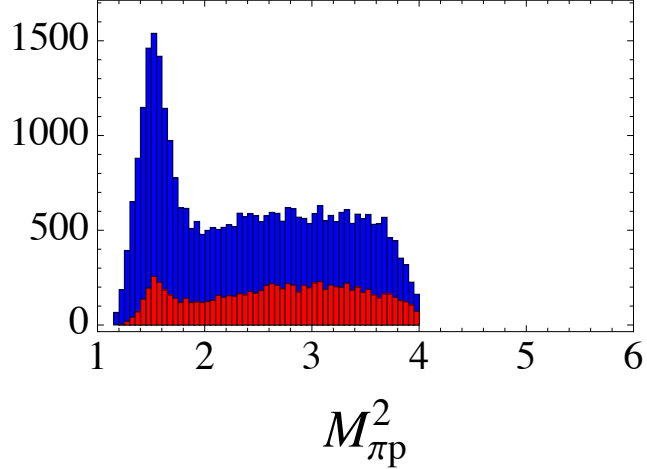
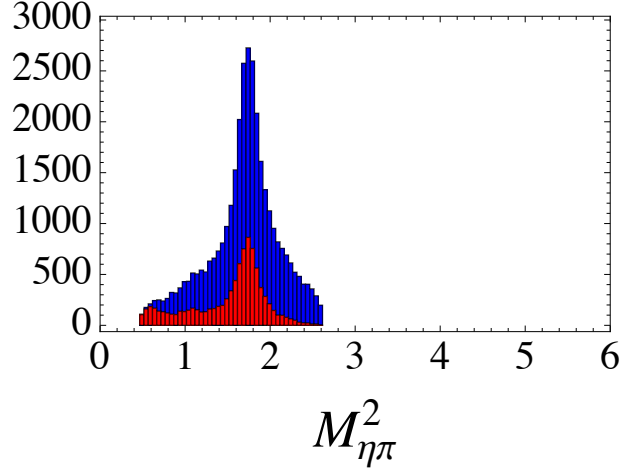


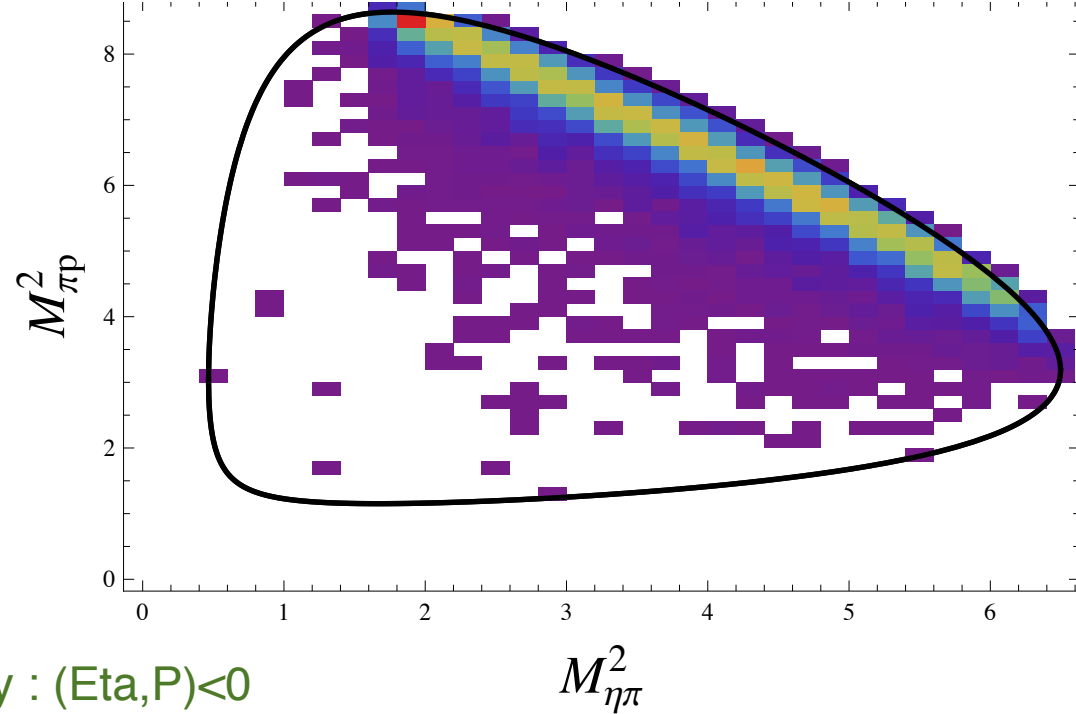
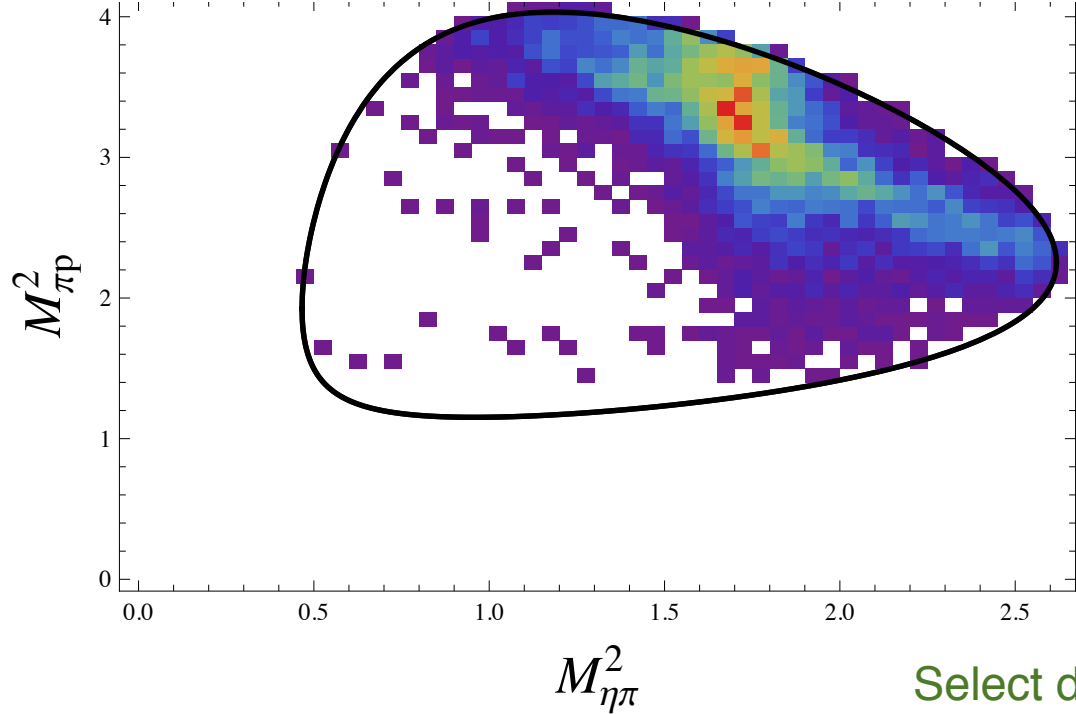
Where are the
Pion, Eta, Proton
longitudinal axis ?



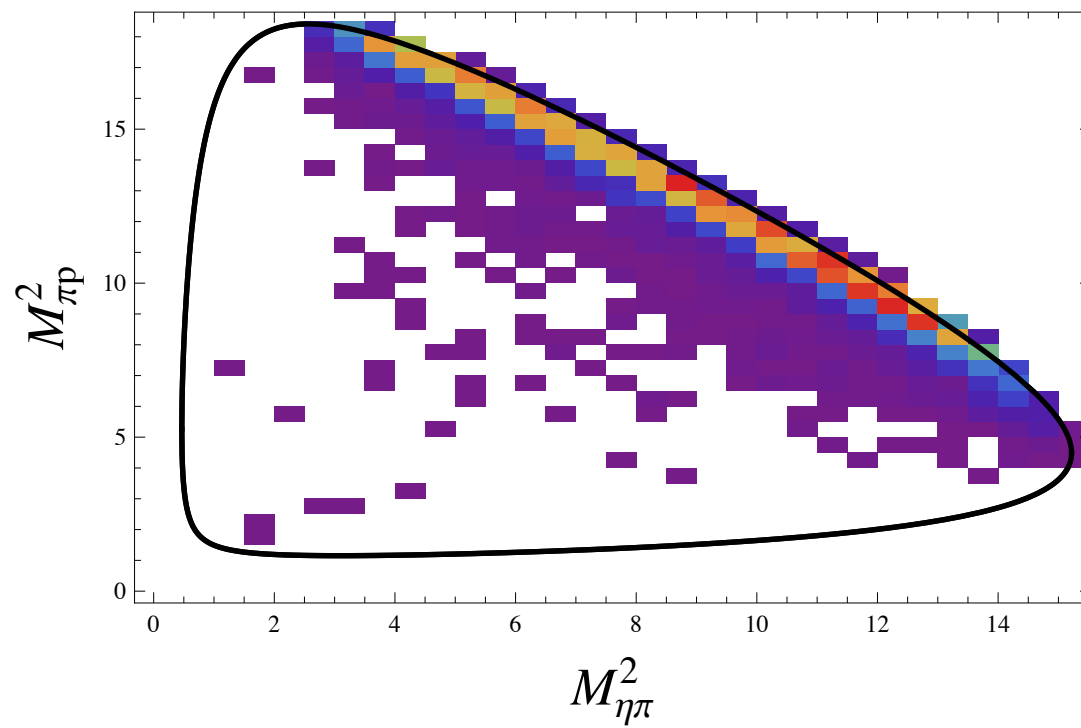
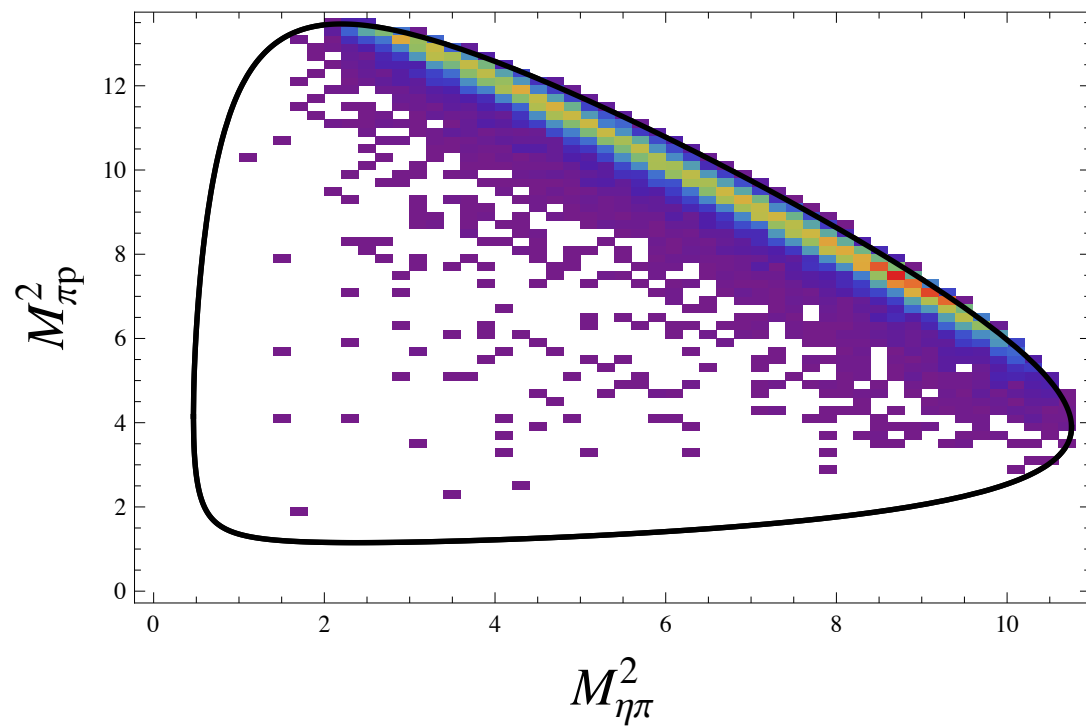
Select data only : (Eta,Pi)>0

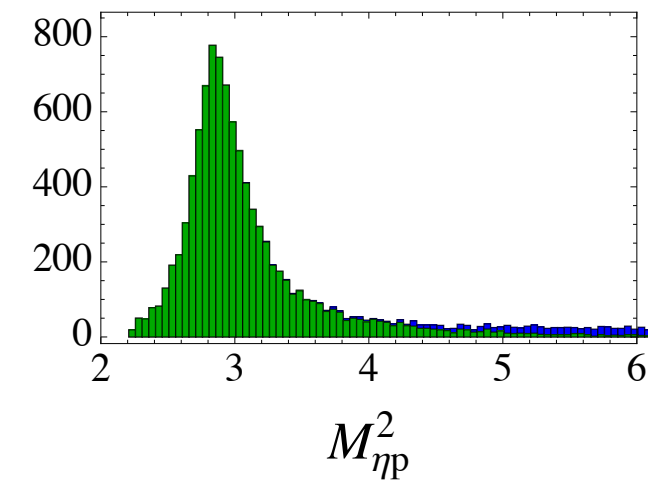
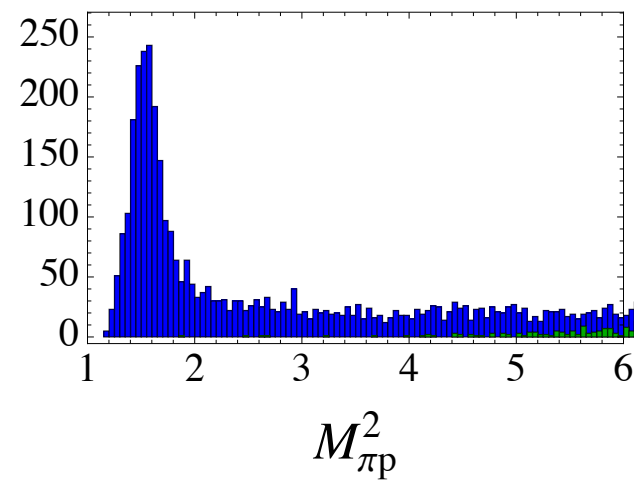
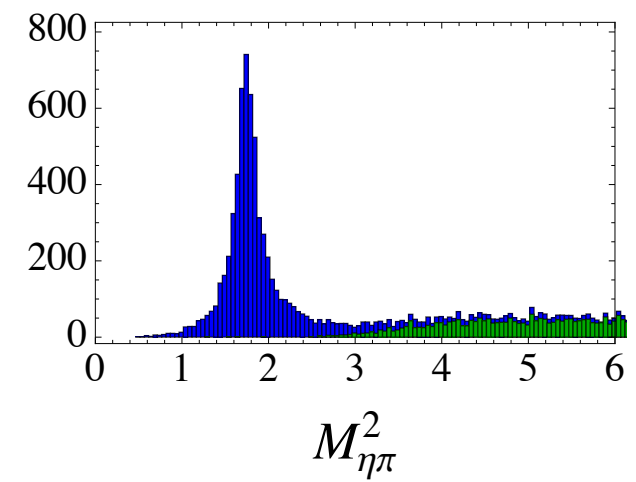
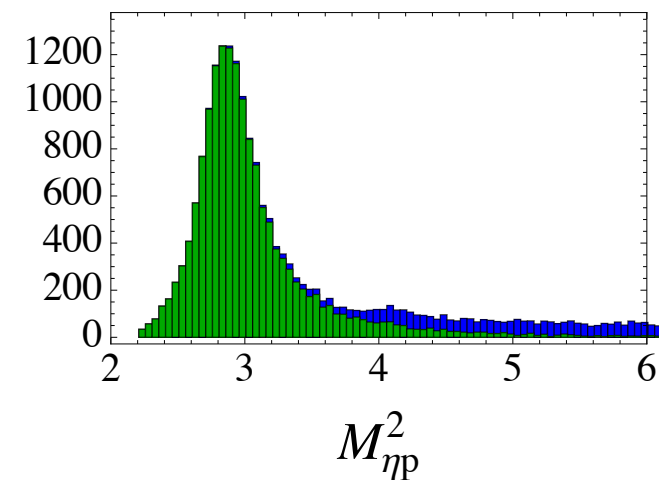
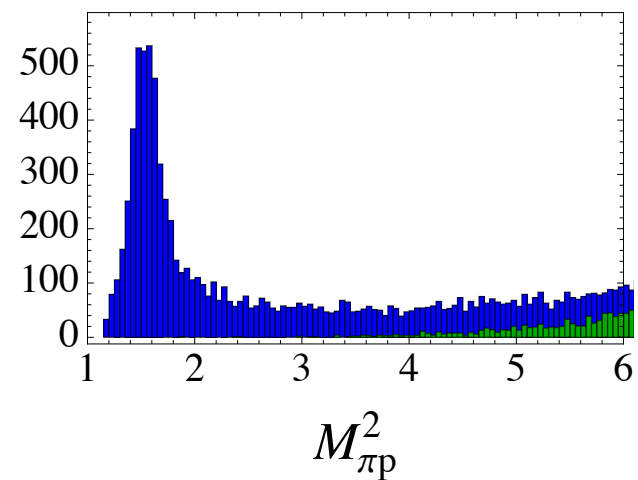
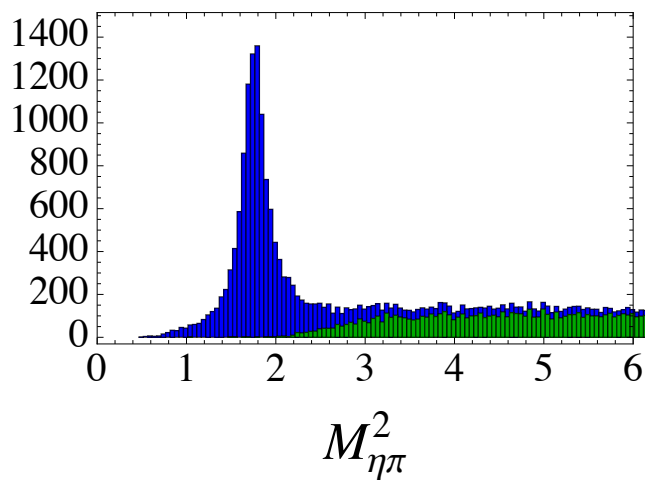
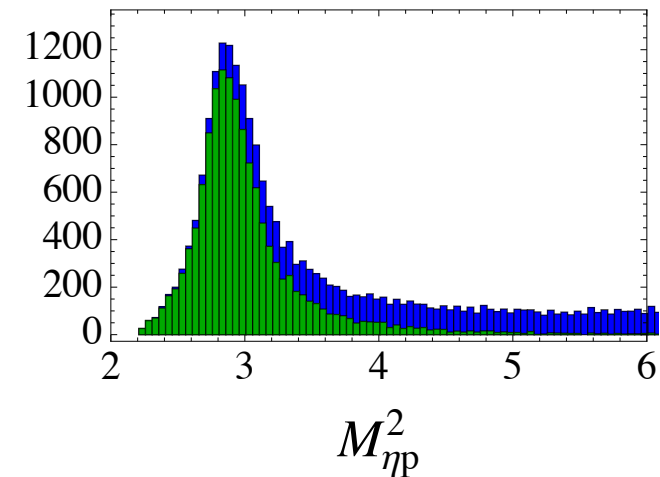
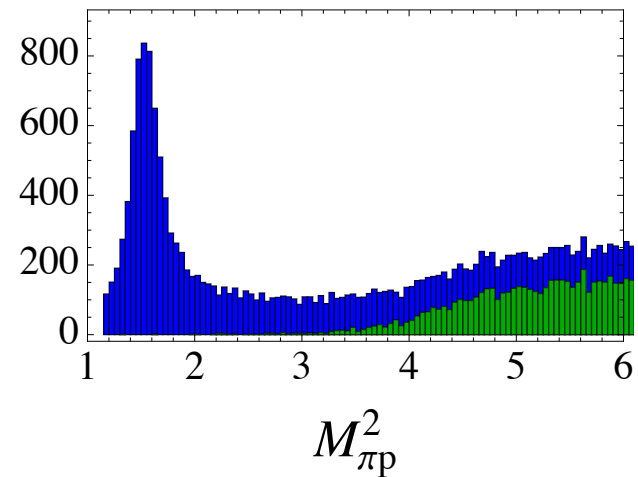
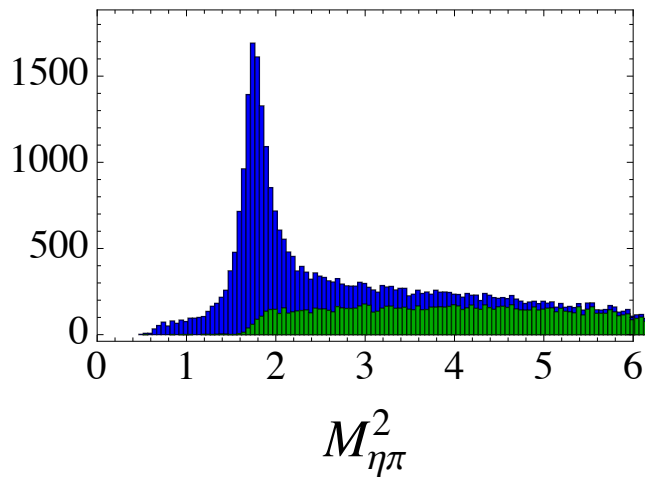
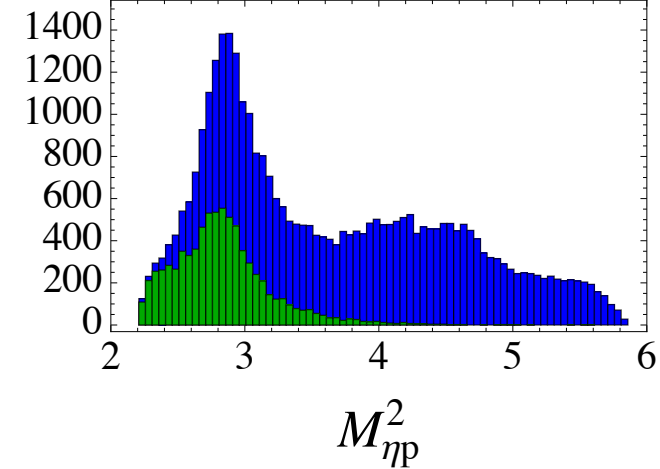
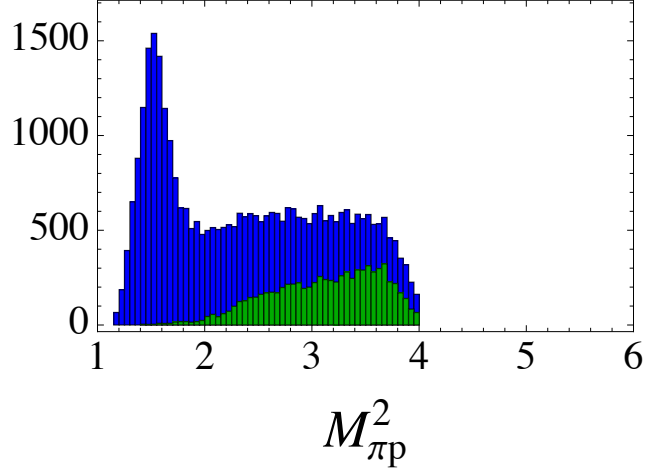
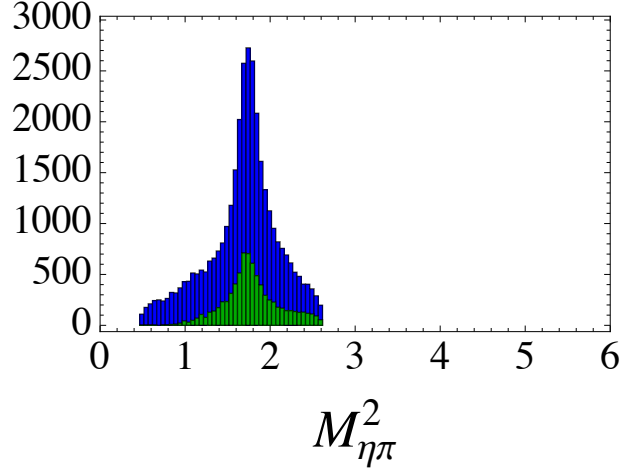


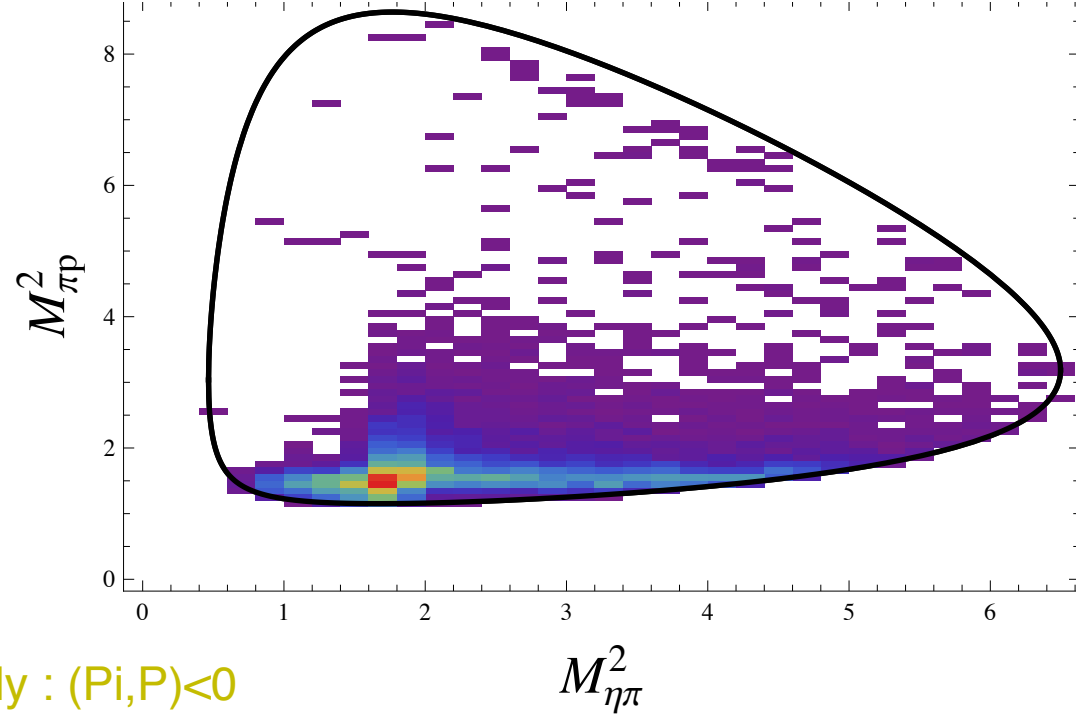
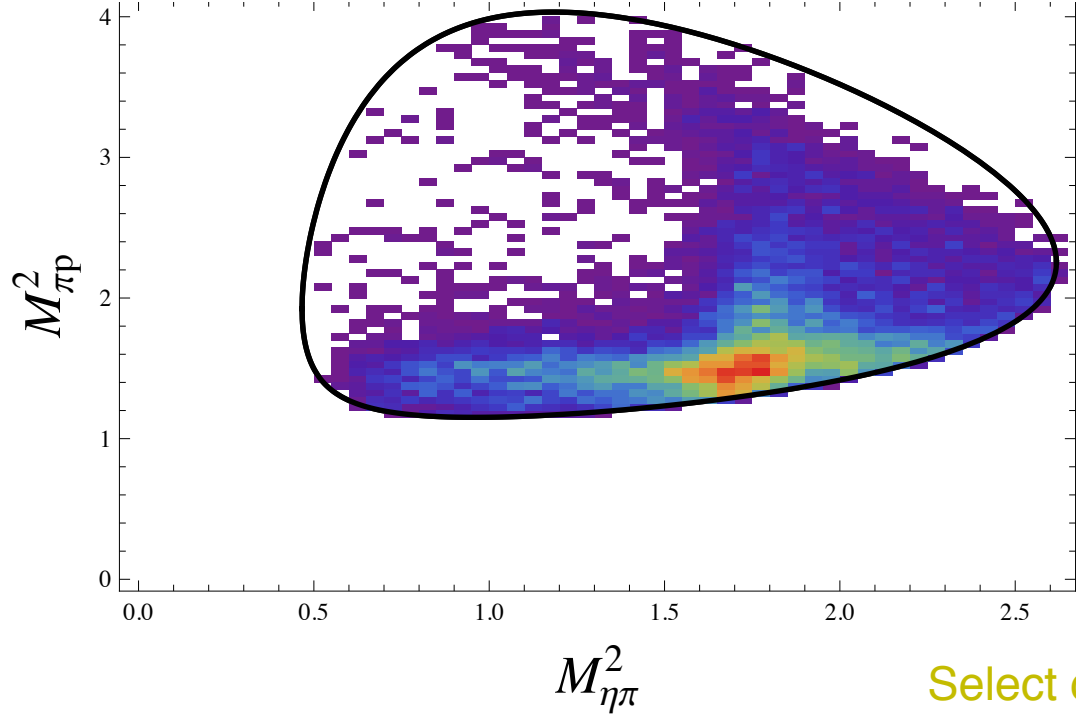




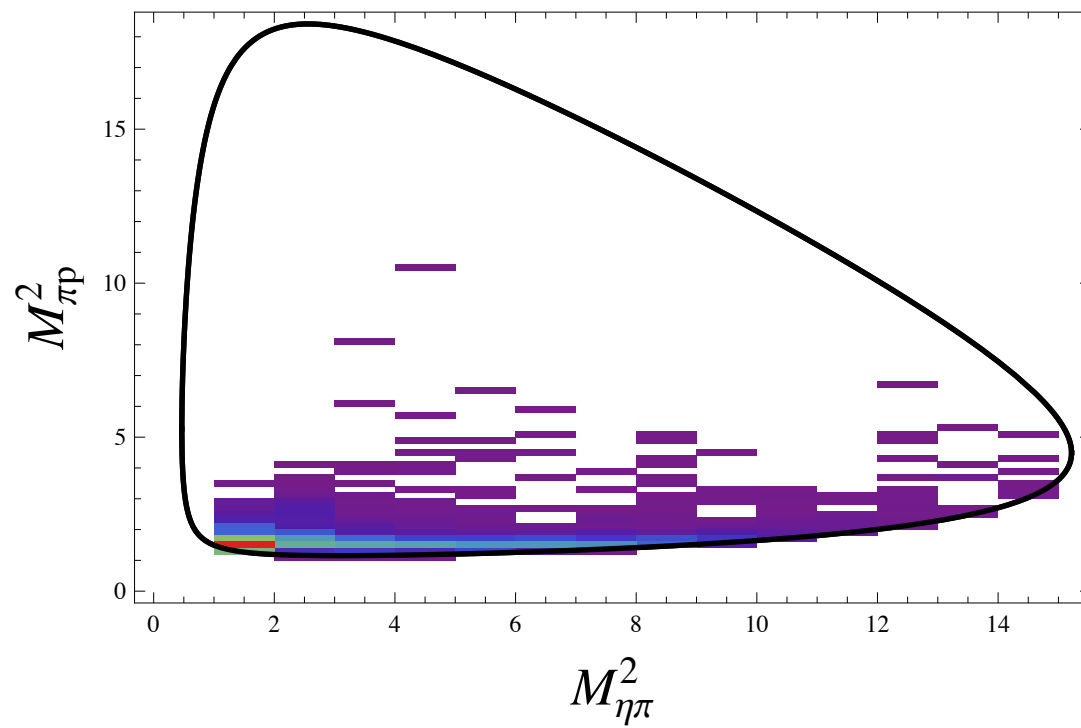
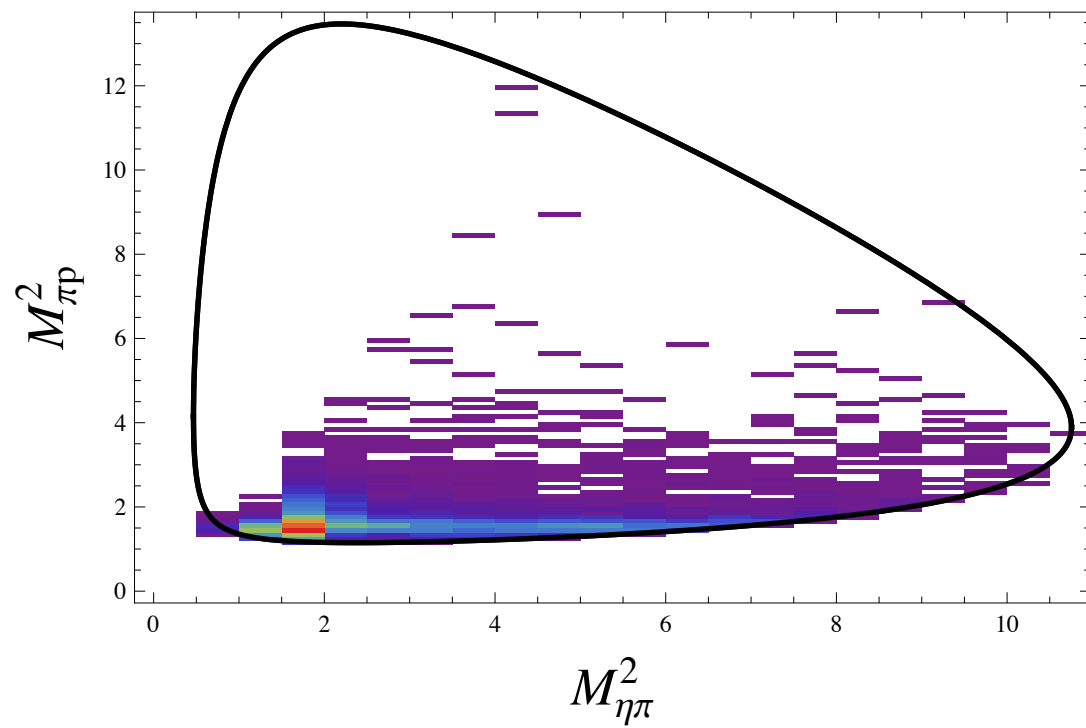
Select data only : (Eta,P)<0

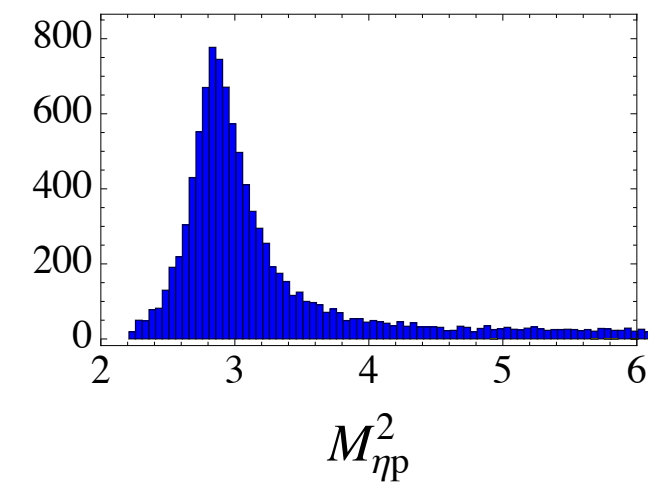
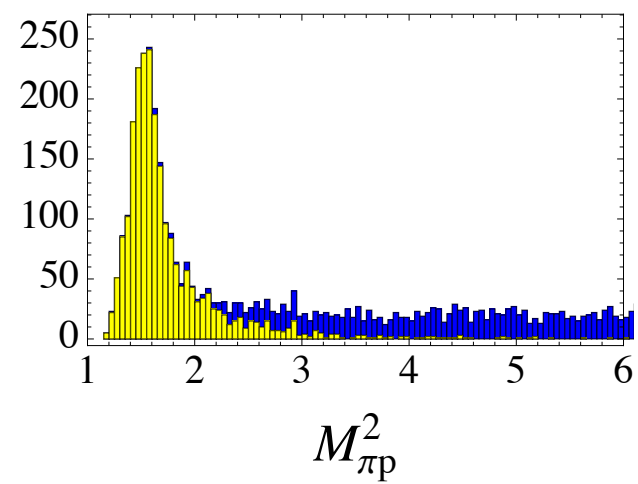
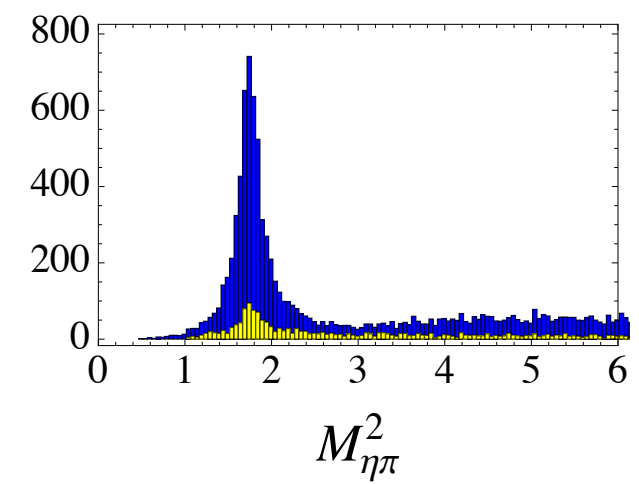
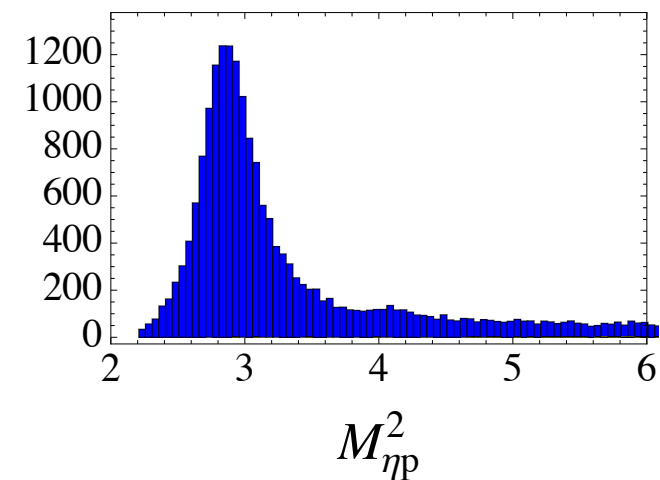
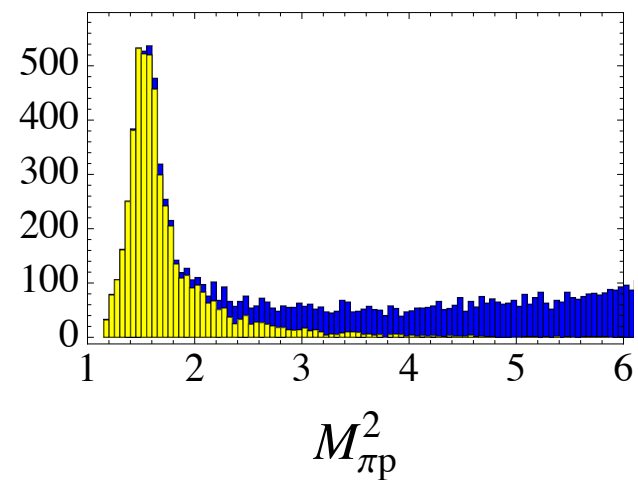
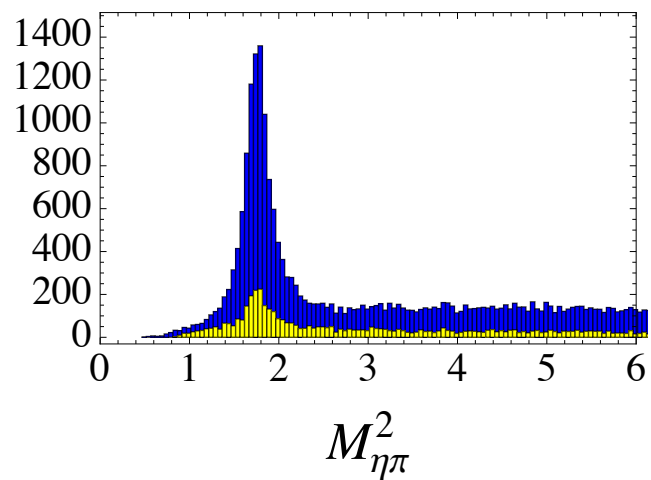
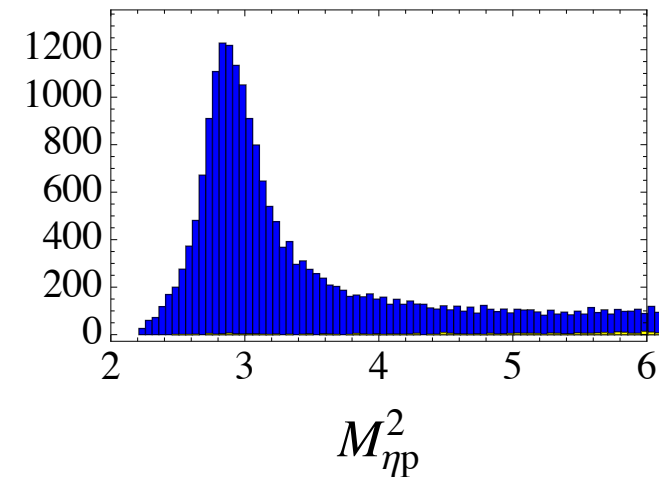
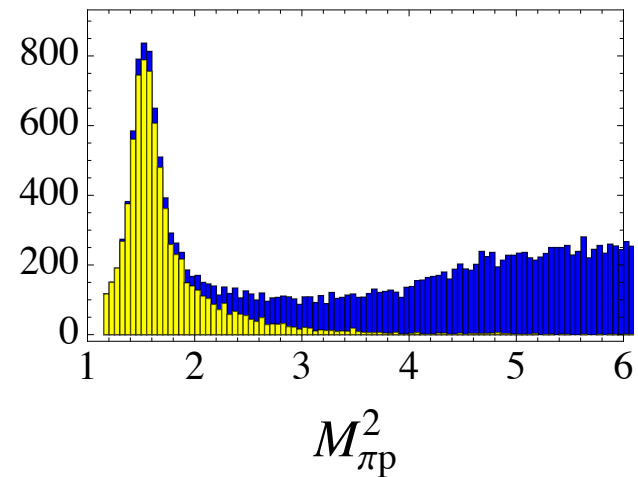
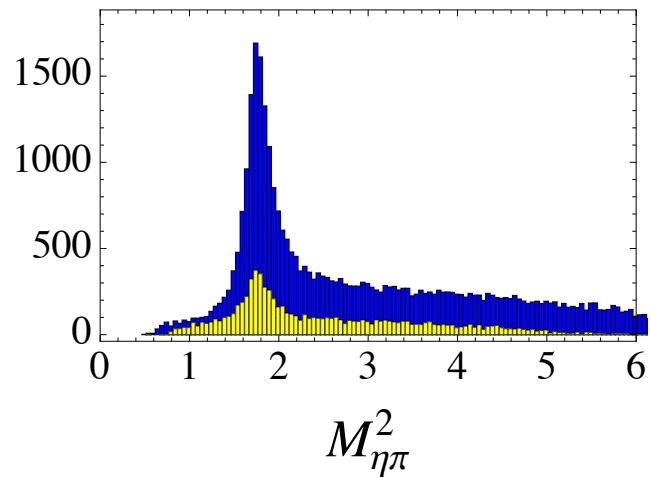
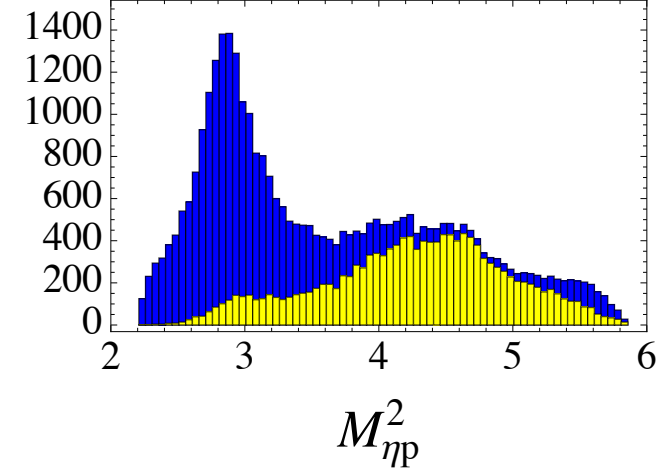
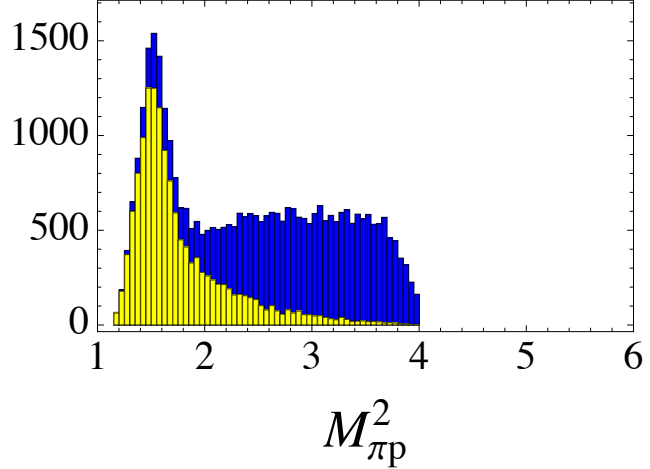
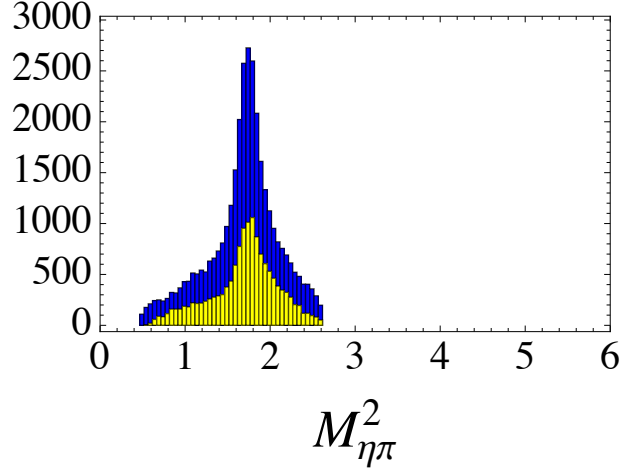






Select data only : (Pi,P)<0

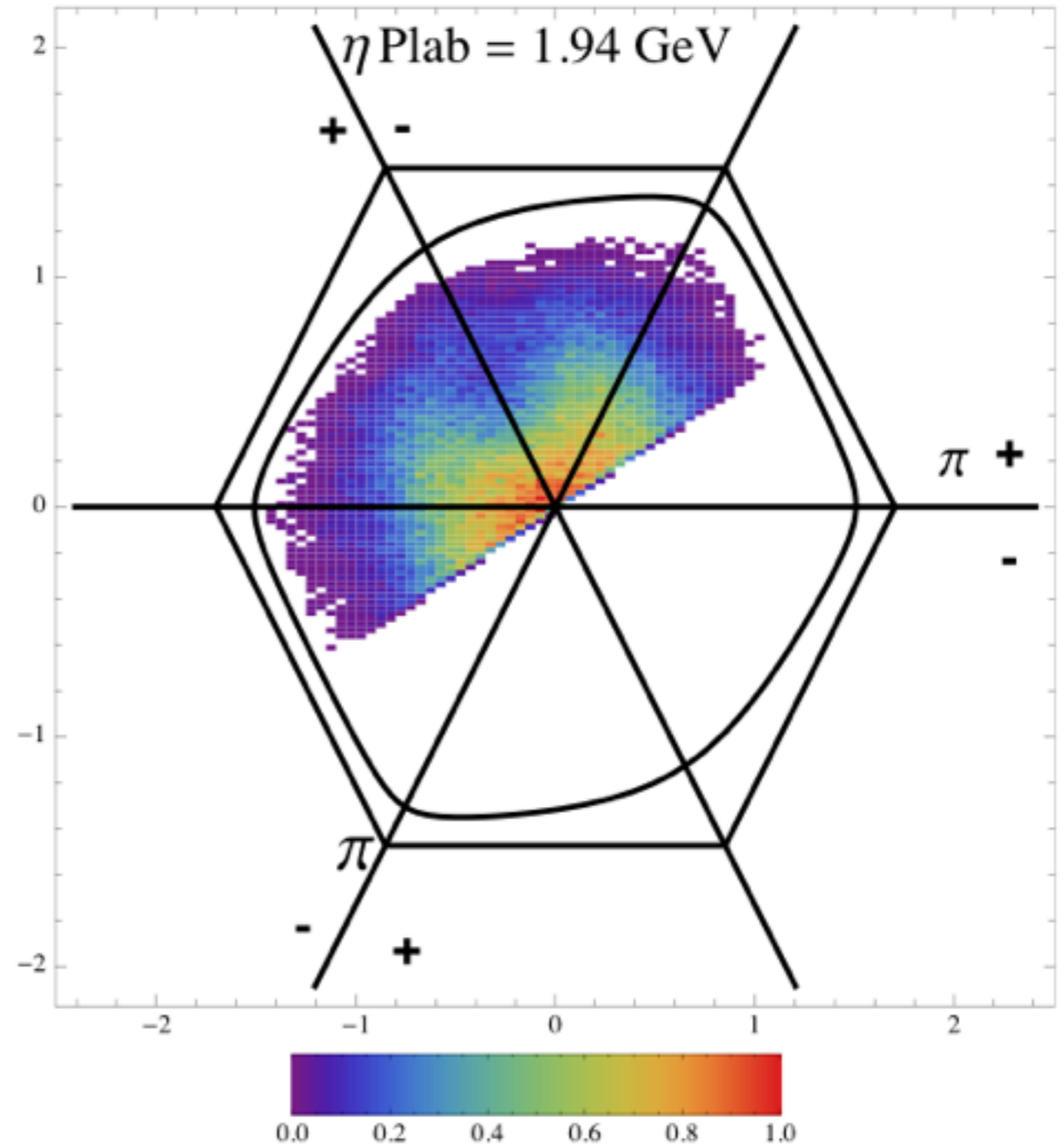
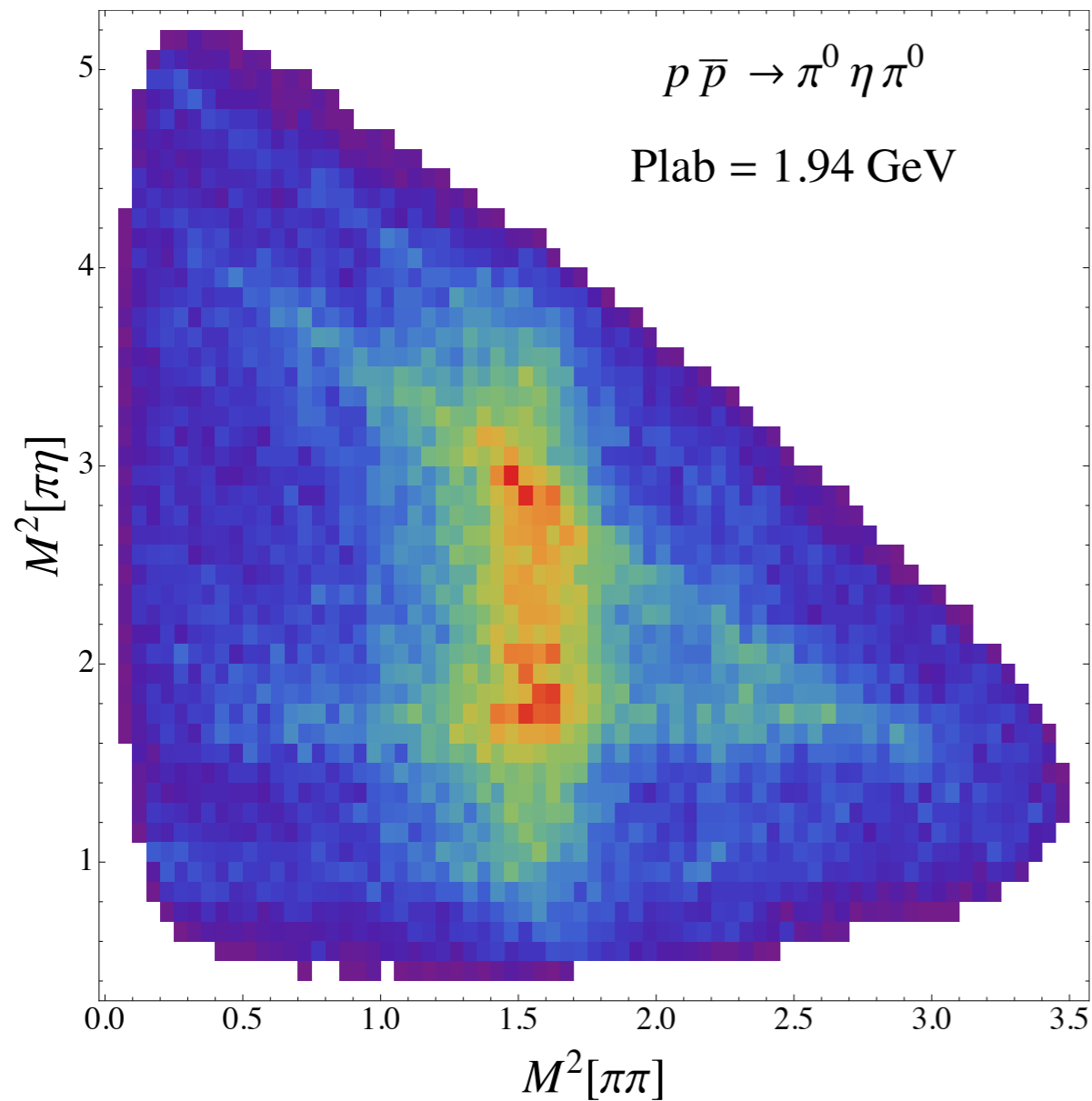






Exercices:

1. Why longitudinal plot might not be appropriate ?
2. Why events only in half Van Hove plot ?



Data (not corrected for acceptance)
from Crystal Barrel