Phi Reconstruction at 1200 A and 1345 A
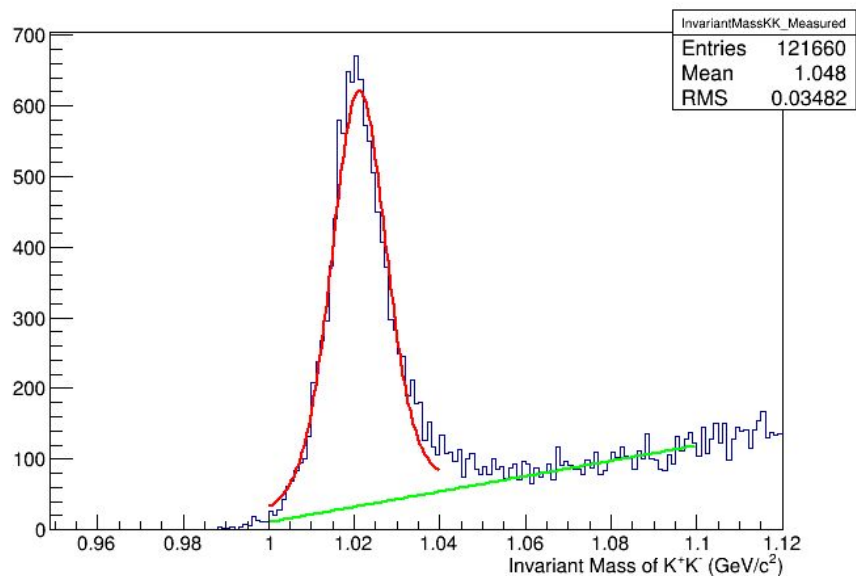
Alex Barnes

Plugin and DSelector details

Plugin

- P4AndVertexFit
- MaxPhotonRFDeltaT = 1.5*beamPeriod
- MinPhotonPIDFOM = 5.7E-7
- MinChargedPIDFOM = 5.7E-7
- Extra Good Track = 4
- MissingMass -0.06 - 0.06

DSelector

- Proton PID DeltaT = 1.0 (TOF), 1.0 (BCAL), 2.0 (FCAL)
- KPlus/Minus PID DeltaT = 0.4 (TOF), 0.5 (BCAL), 1.0 (FCAL)
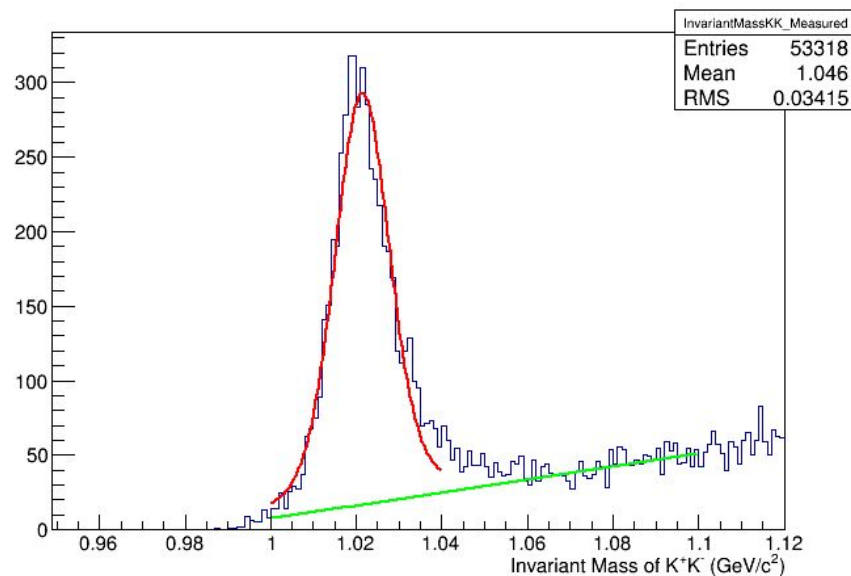- Proton CDC dE/dx cut

Invariant Mass - Measured, PARA

1200 A
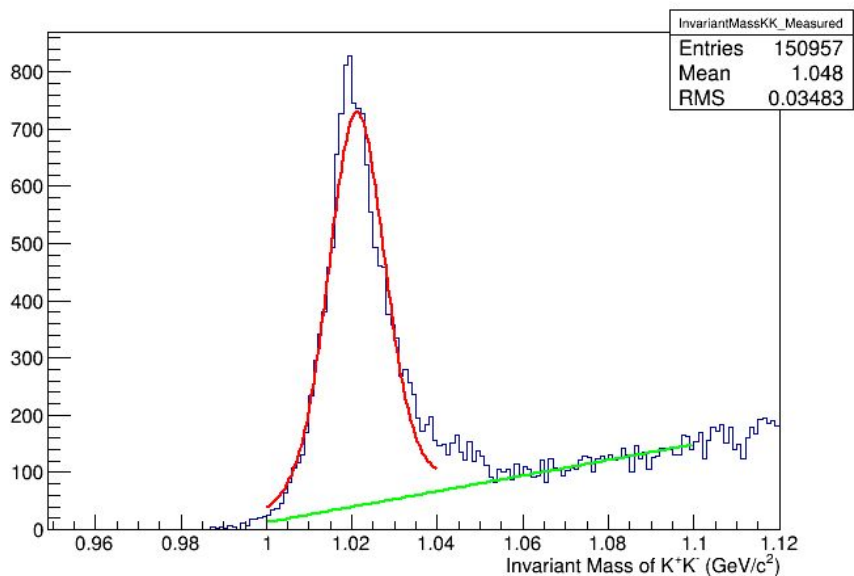

Mass = 1.02107
Sigma = 0.005427
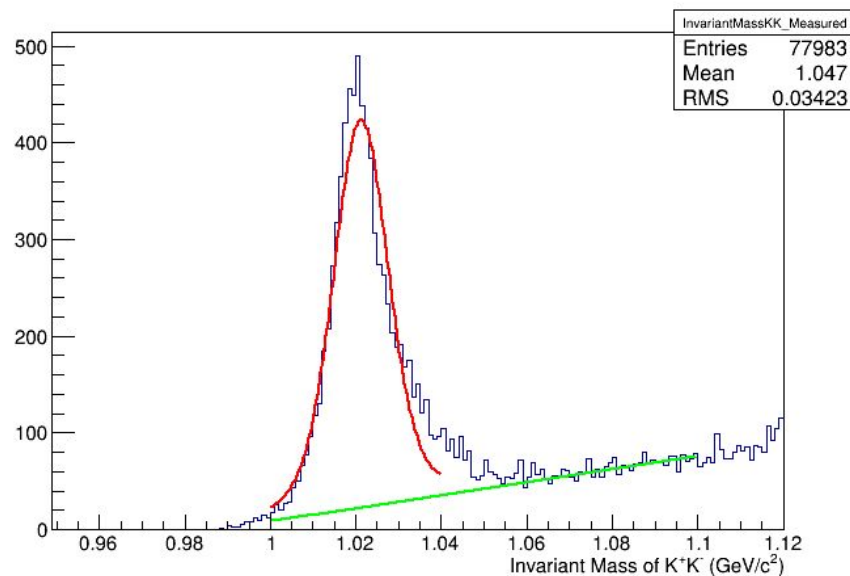
1345 A

Mass = 1.02136
Sigma = 0.00546634

Invariant Mass - Measured, PERP

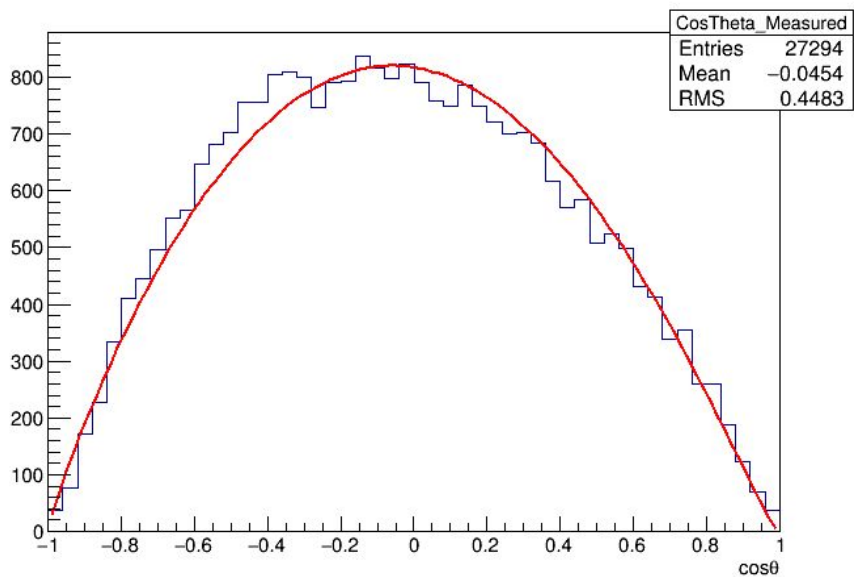**1200 A**

1345 A

Mass = 1.02109
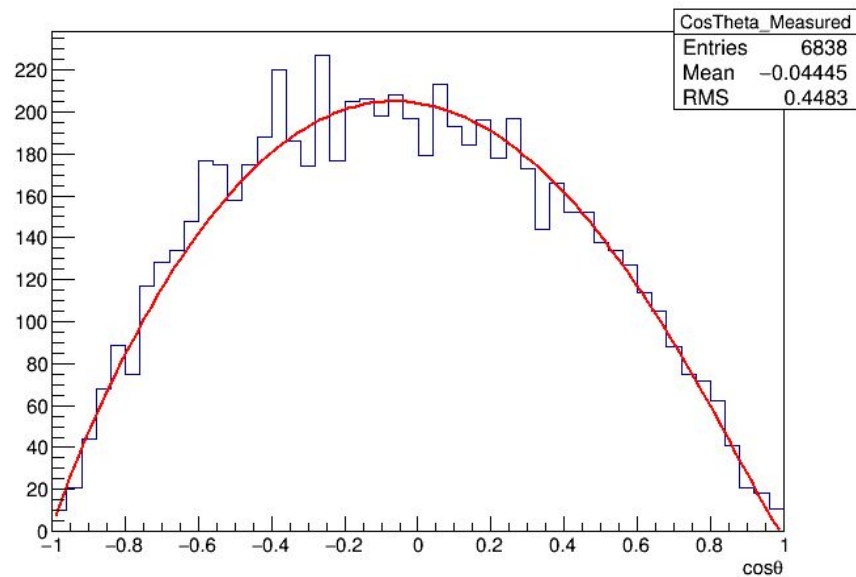Sigma = 0.005658

Mass = 1.02115
Sigma = 0.00546192

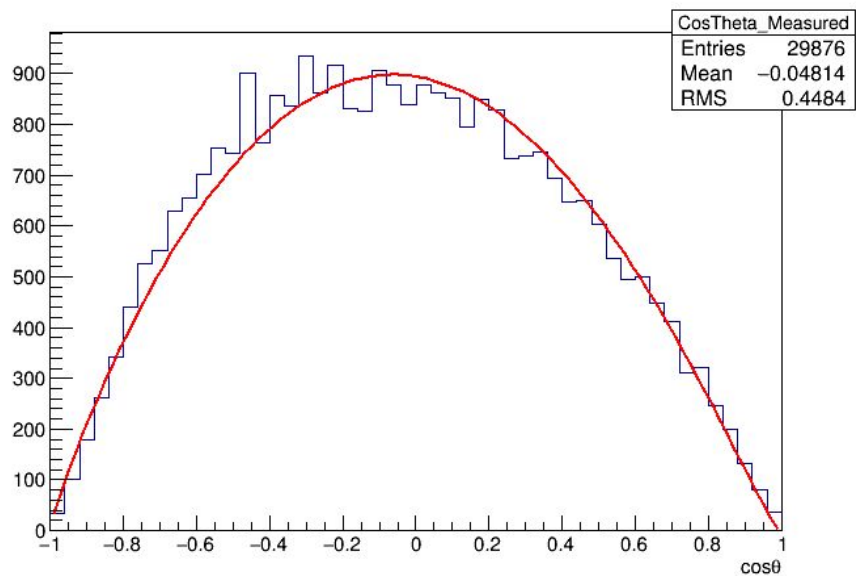# Cos(theta) - Measured, PARA

1200 A

Shifted by -0.073

1345 A

Shifted by -0.080

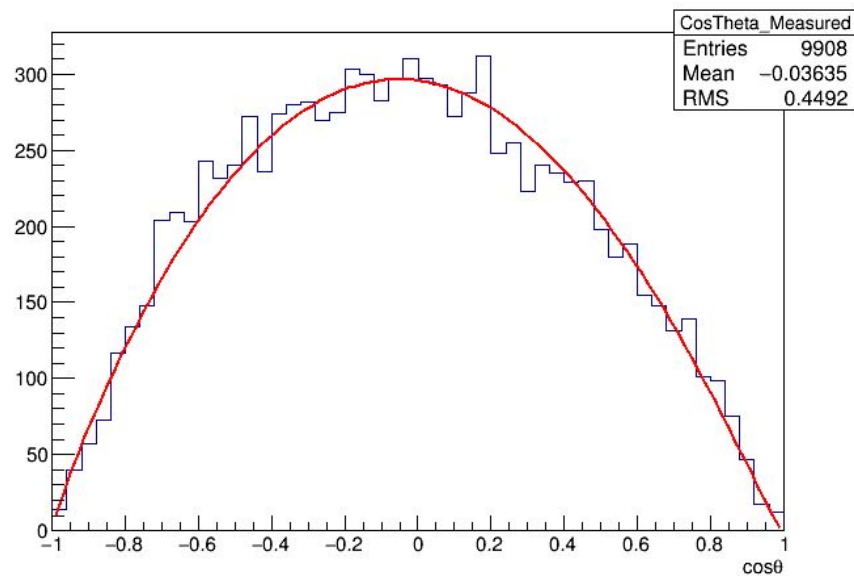# Cos(theta) - Measured, PERP

1200 A

CosTheta_Measured	
Entries	29876
Mean	−0.04814
RMS	0.4484

Shifted by -0.078

1345 A

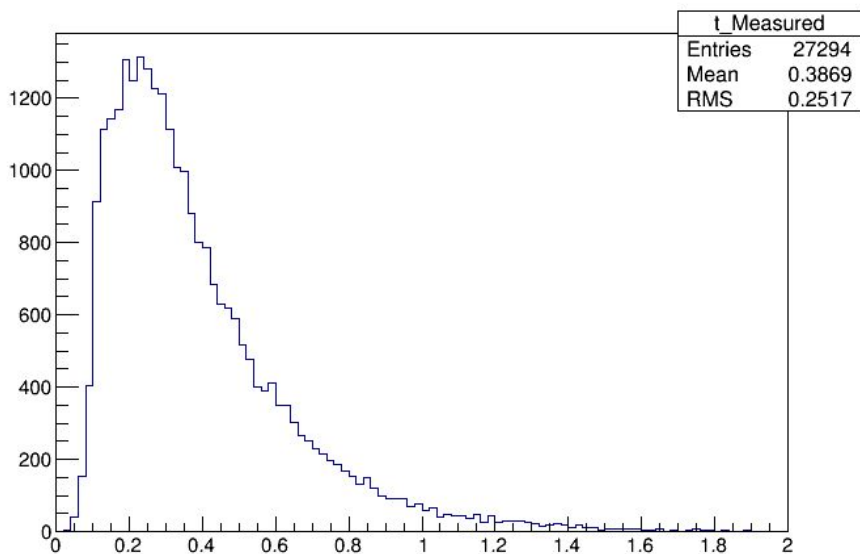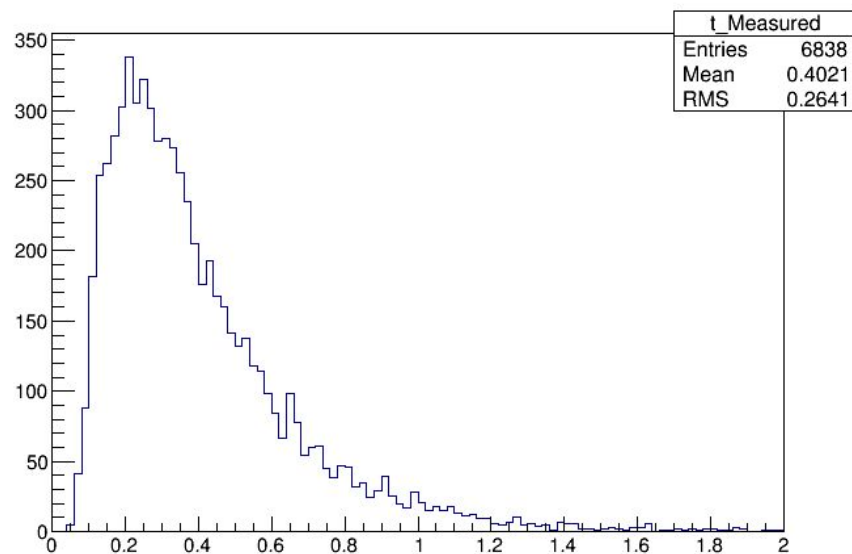| CosTheta_Measured	
Entries	9908
Mean	−0.03635
RMS	0.4492

Shifted by -0.061
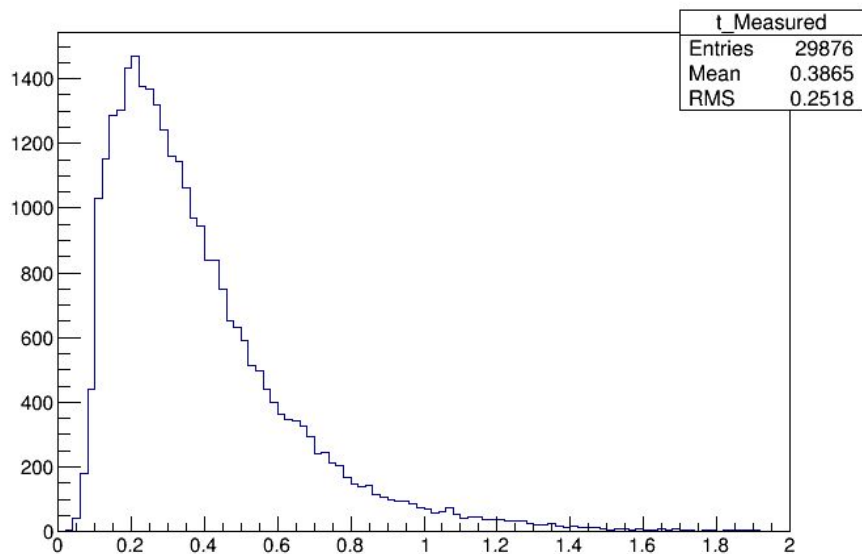
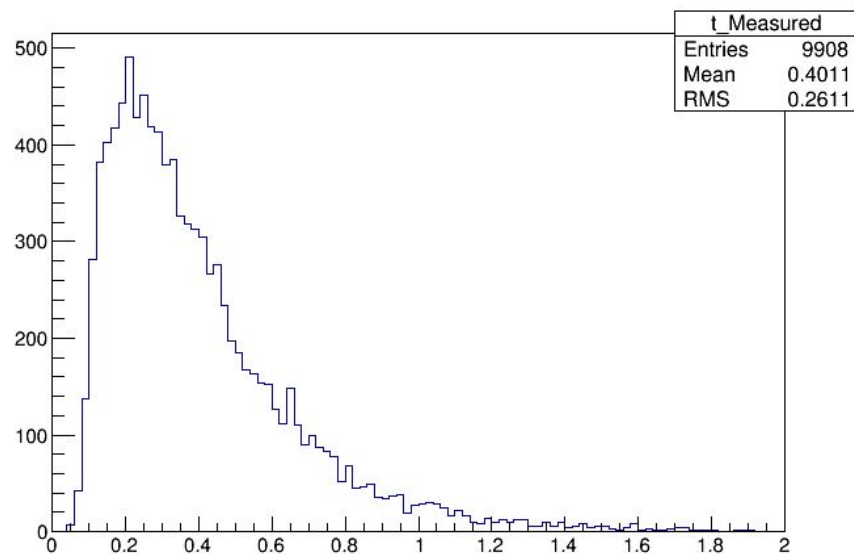# t-distribution - Measured, PARA

1200 A

1345 A

t-distribution - Measured, PERP

1200 A

1345 A

Spring 2016 Estimated Yields

PARA

- 1200 A: 2.7e9 triggers, ~10,300 events, ratio = 3.8e-6
- 1345 A: 9.17e8 triggers, ~4,850 events, ratio = 5.35e-6

PERP

- 1200 A: 2.8e9 triggers, ~12,500 events, ratio = 4.35e-6
- 1345 A: 1.31e9 triggers, ~7,200 events, ratio = 5.5e-6