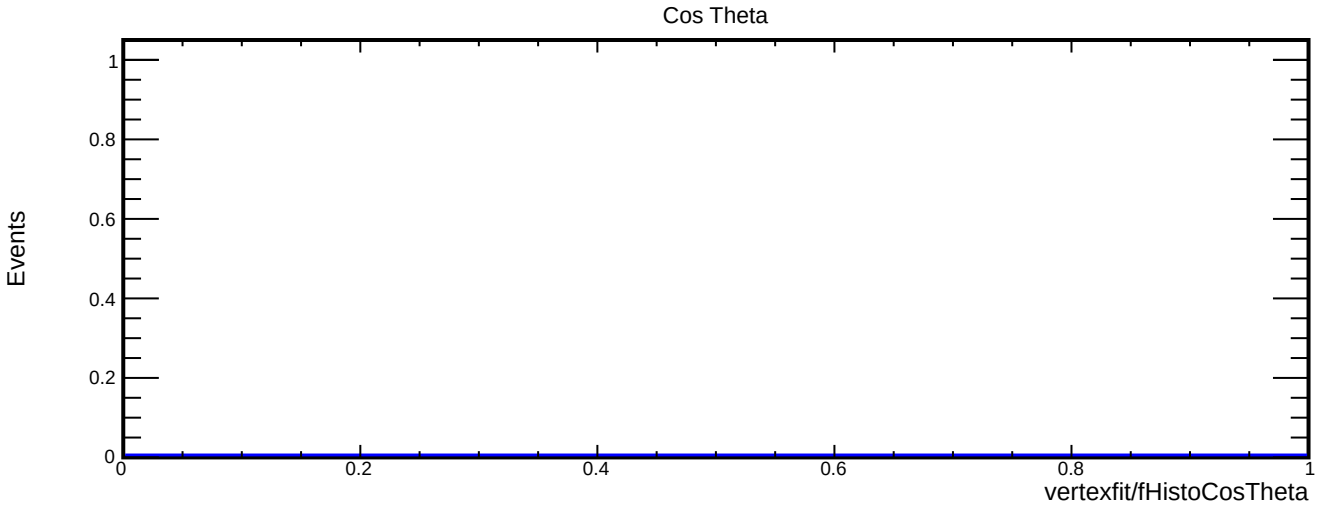
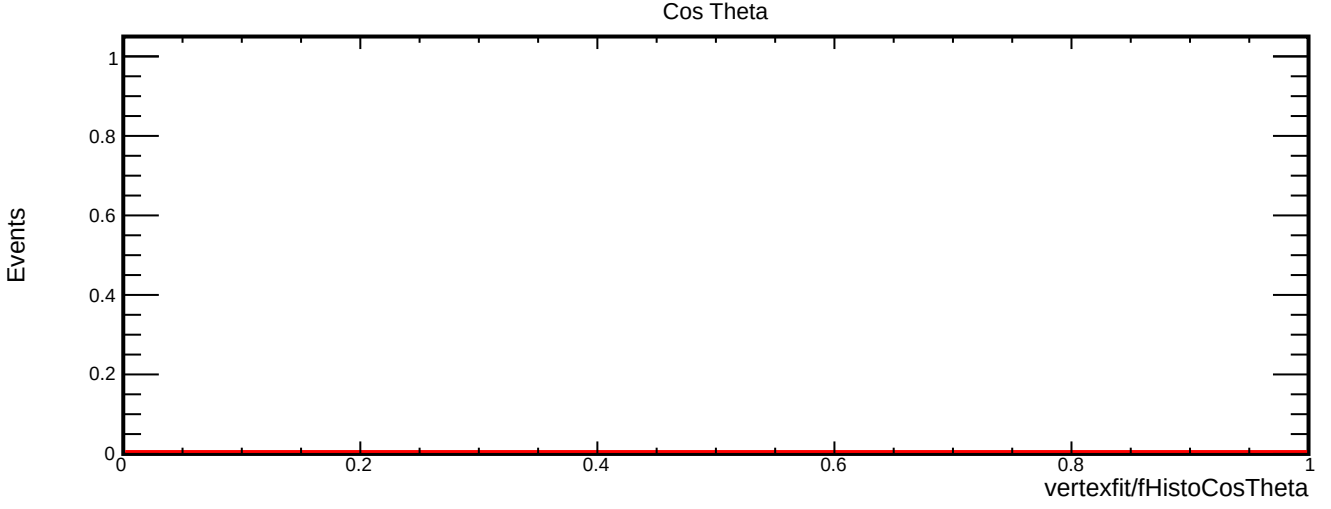
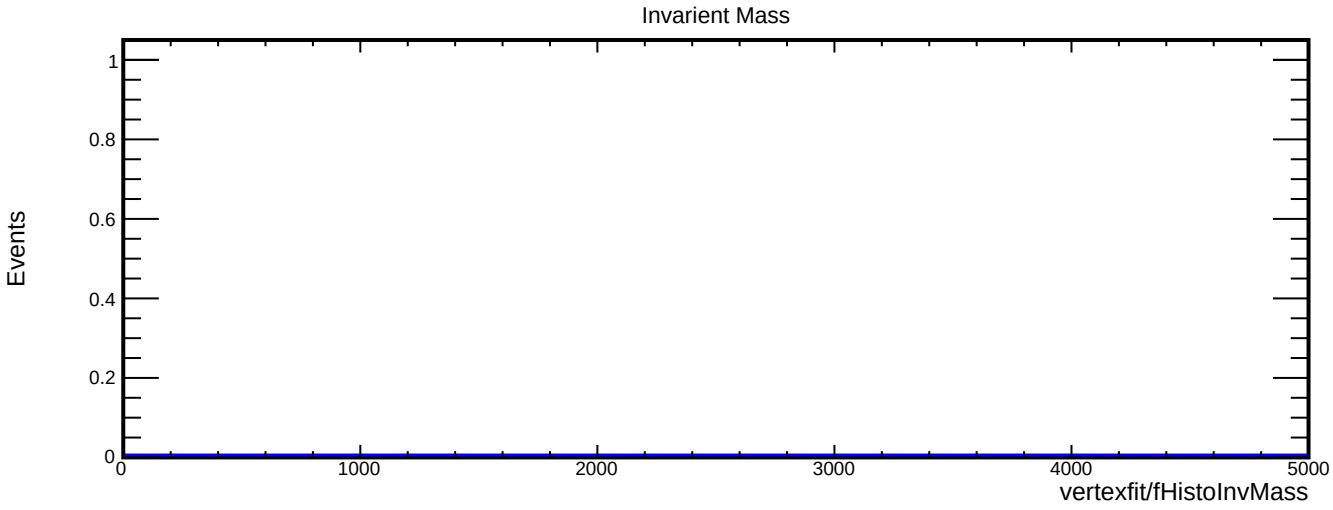
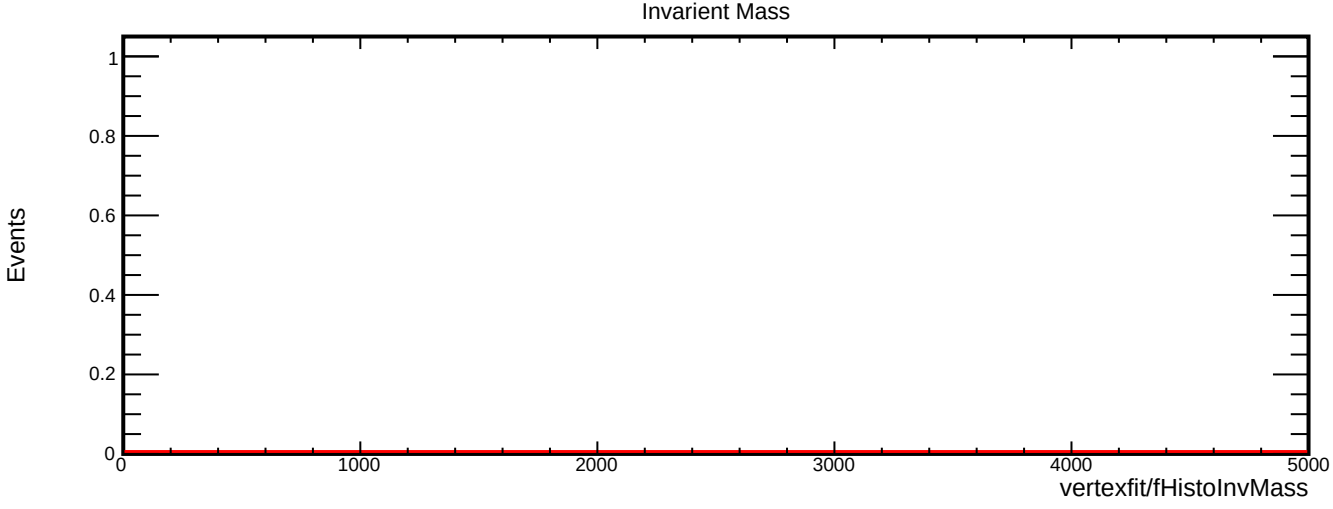
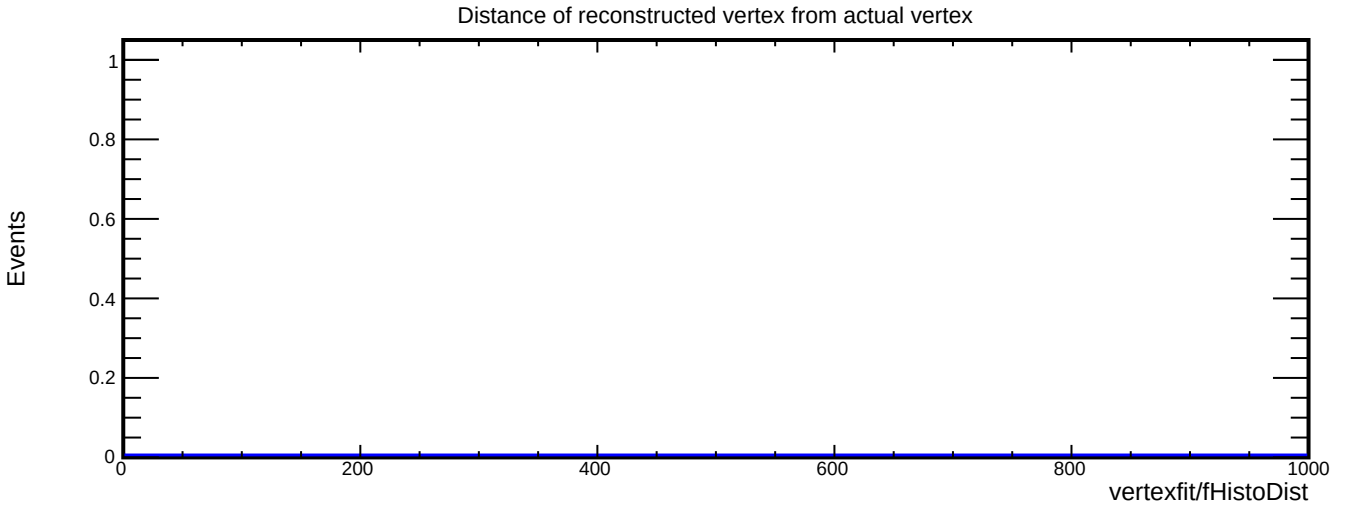
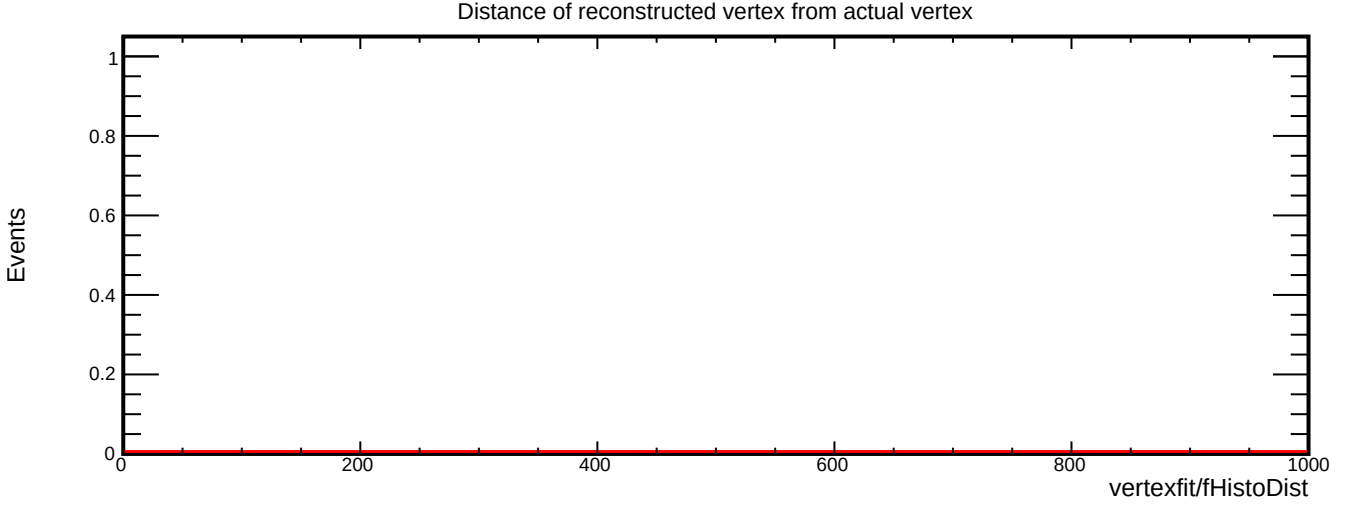

Cos Theta
Events
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
vertexfit/fHistoCosTheta

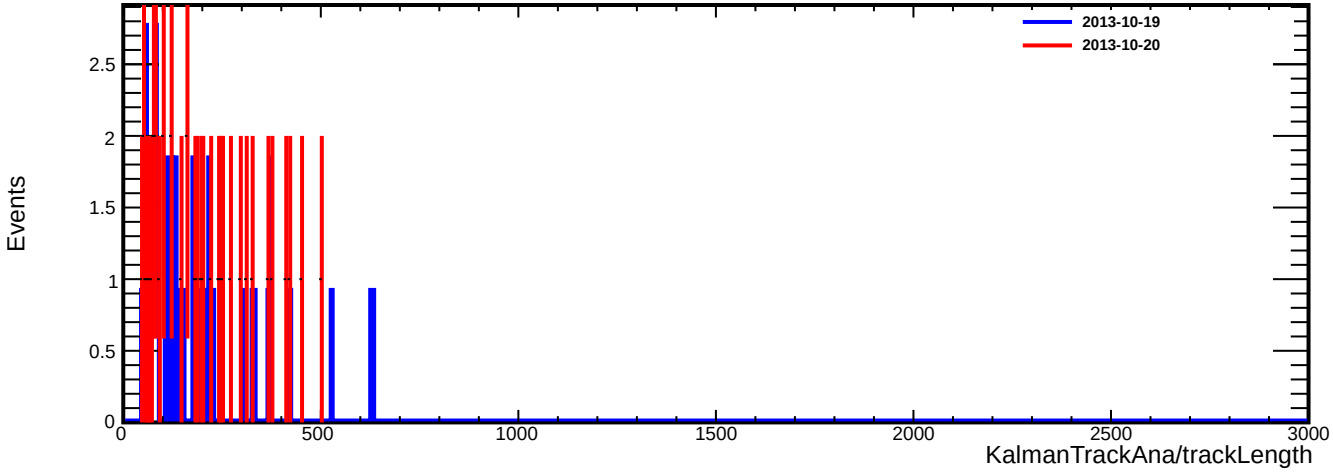

Cos Theta
Events
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
vertexfit/fHistoCosTheta

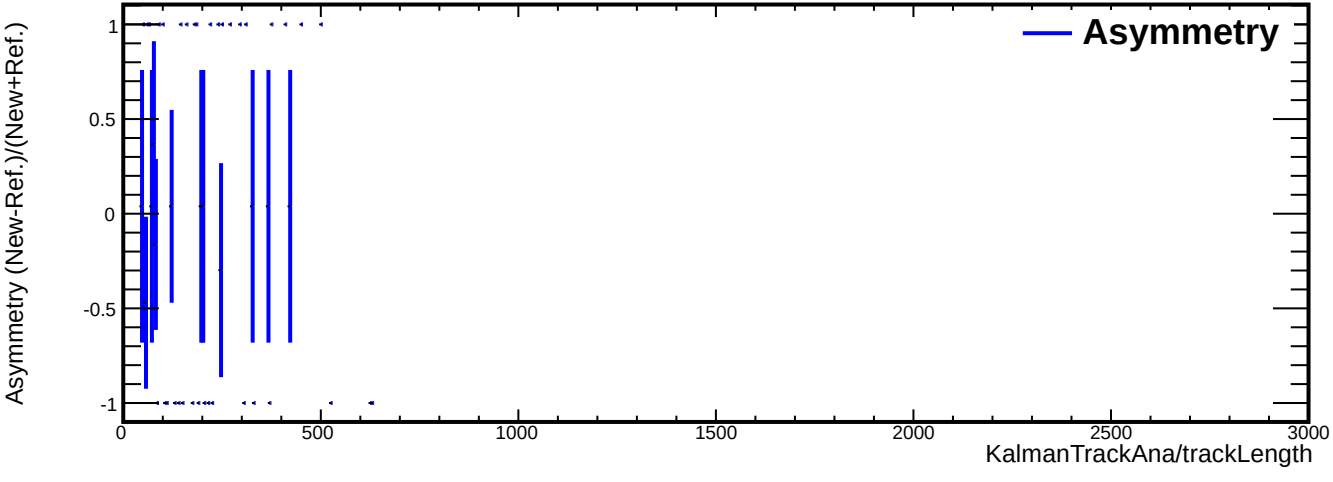

Invarient Mass
Events
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
vertexfit/fHistoInvMass

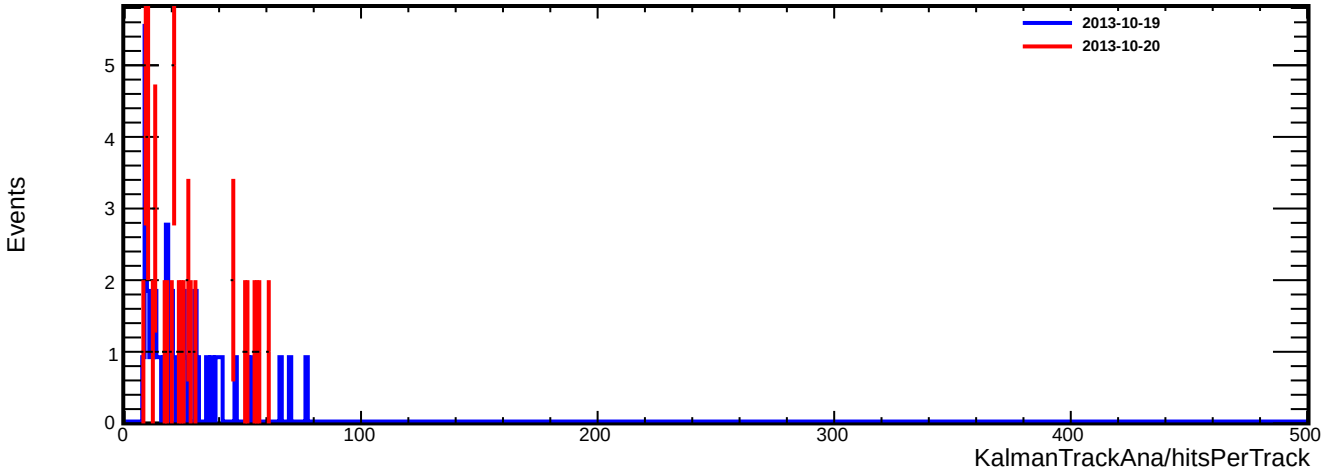

Invarient Mass
Events
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
vertexfit/fHistoInvMass

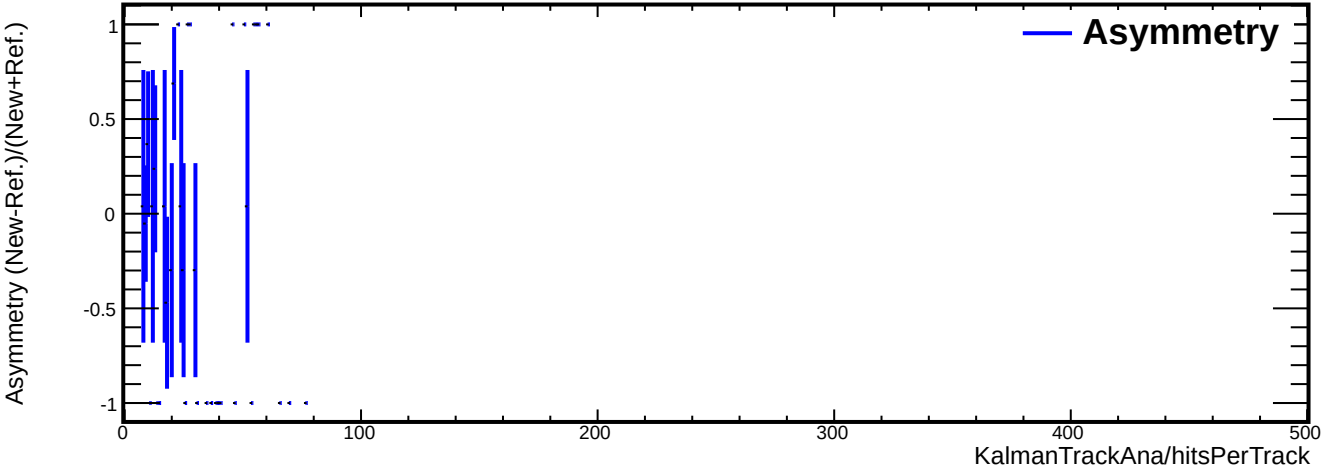

Distance of reconstructed vertex from actual vertex
Events
1
0.8
0.6
0.4
0.2
0
0
200
400
600
800
1000
vertexfit/fHistoDist

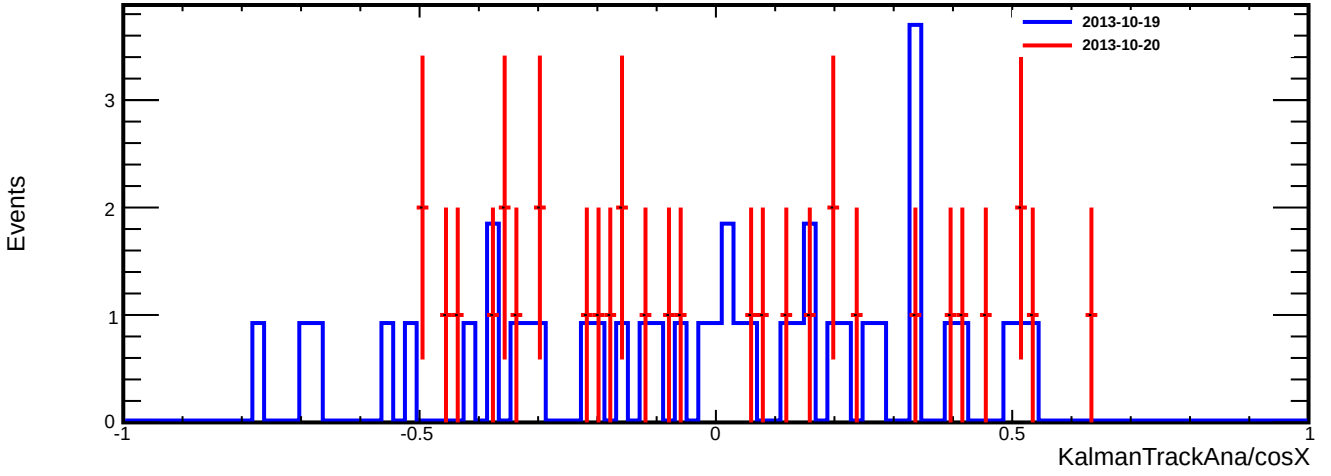

Distance of reconstructed vertex from actual vertex
Events
1
0.8
0.6
0.4
0.2
0
0
200
400
600
800
1000
vertexfit/fHistoDist

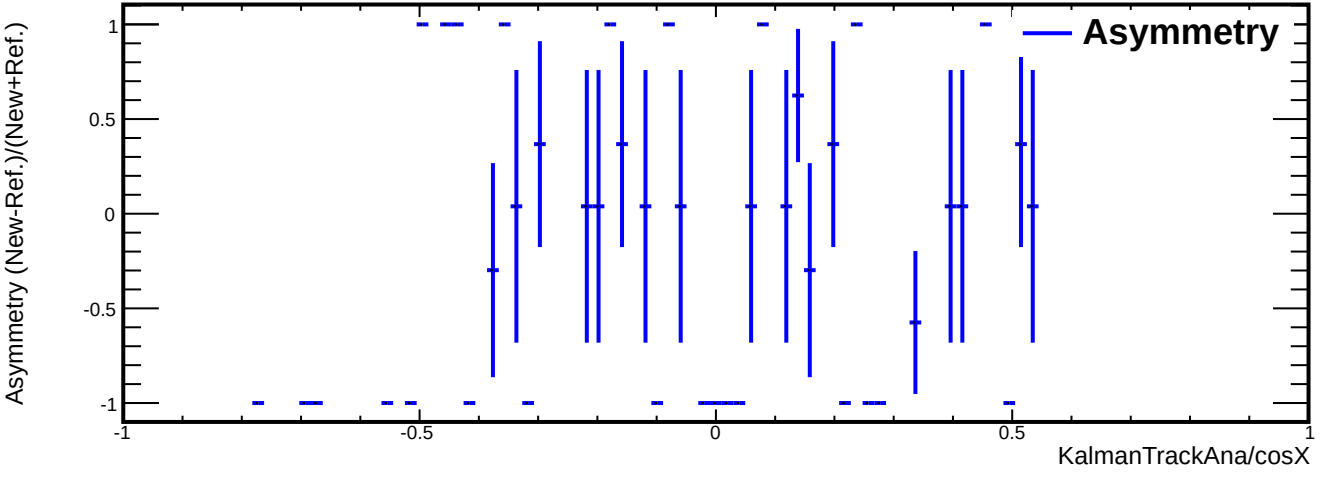

2013-10-19
2013-10-20
Events
0
0.5
1
1.5
2
2.5
0
500
1000
1500
2000
2500
3000
KalmanTrackAna/trackLength

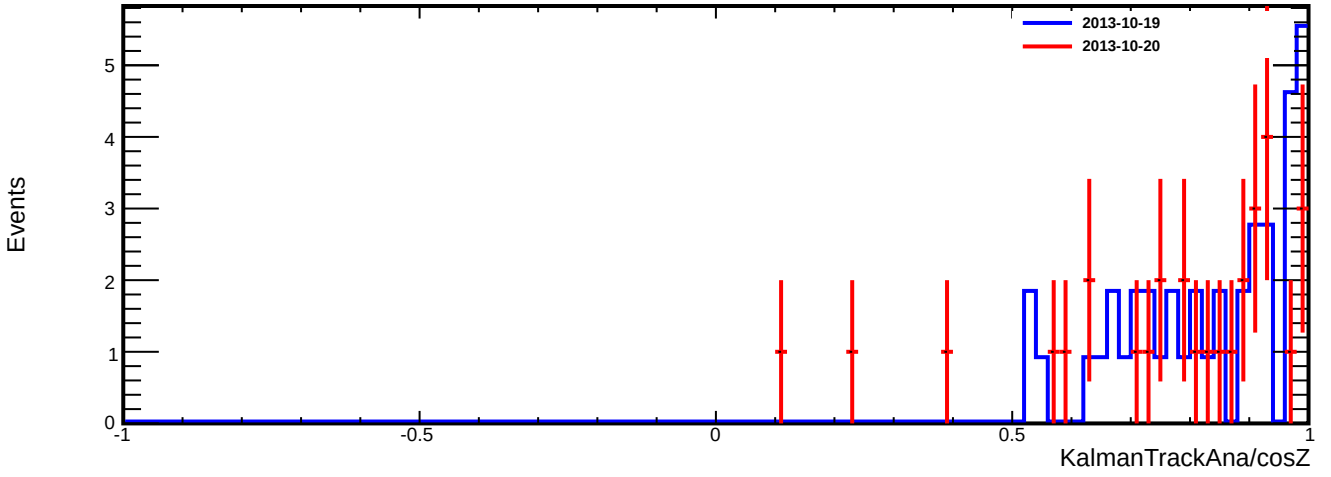

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
500
1000
1500
2000
2500
3000
KalmanTrackAna/trackLength

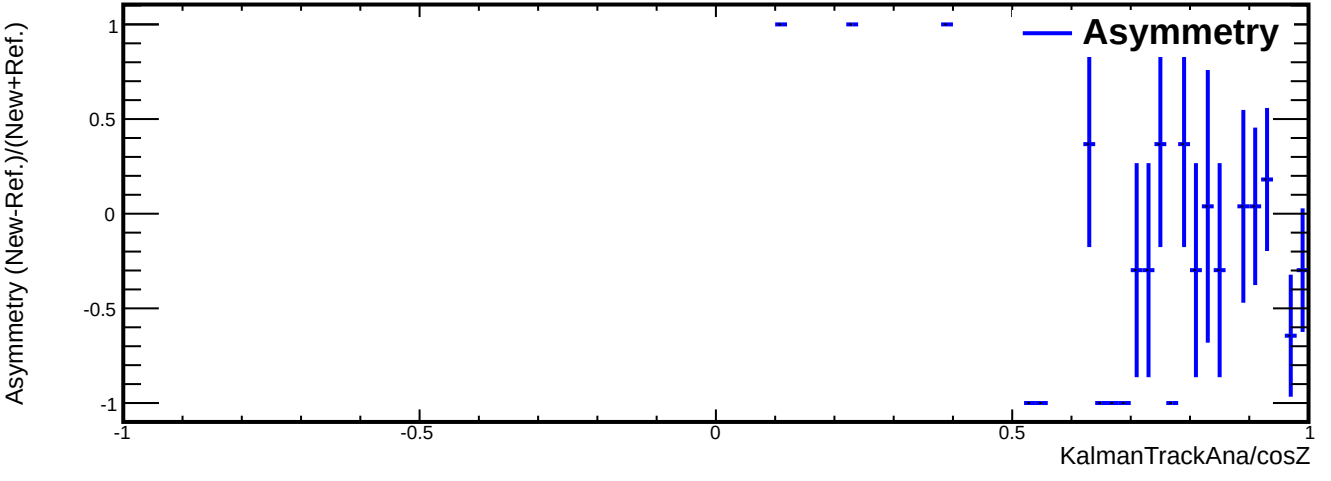

2013-10-19
2013-10-20
Events
0
1
2
3
4
5
0
100
200
300
400
500
KalmanTrackAna/hitsPerTrack

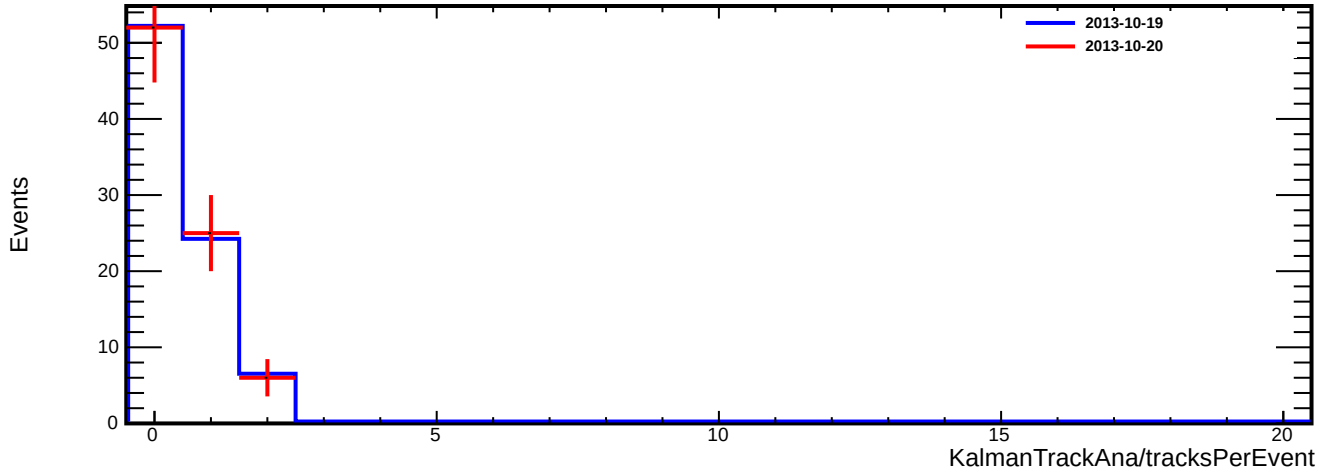

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
100
200
300
400
500
KalmanTrackAna/hitsPerTrack

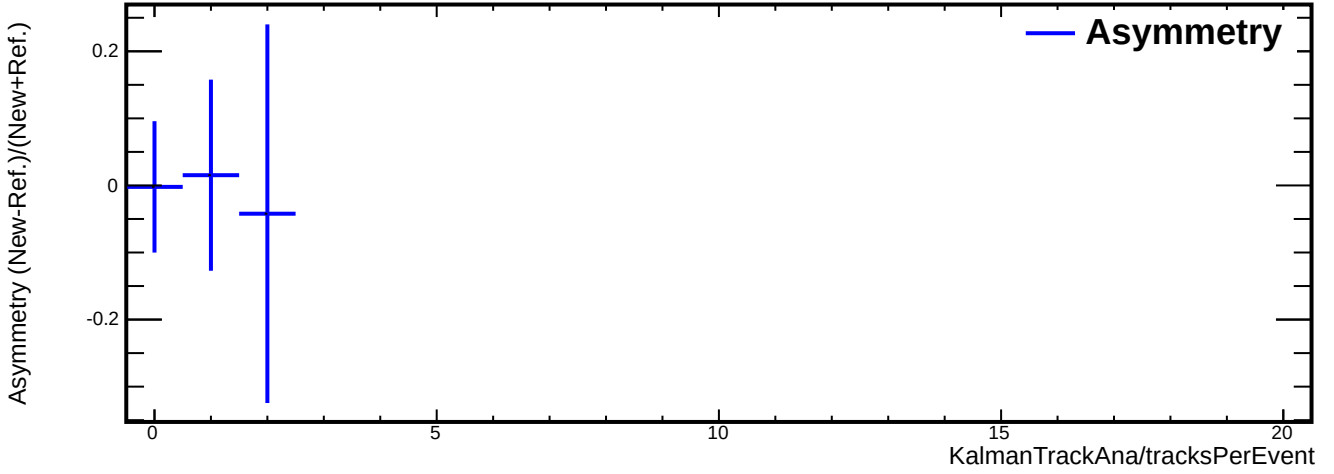

2013-10-19
2013-10-20
Events
0
1
2
3
-1
-0.5
0
0.5
1
KalmanTrackAna/cosX

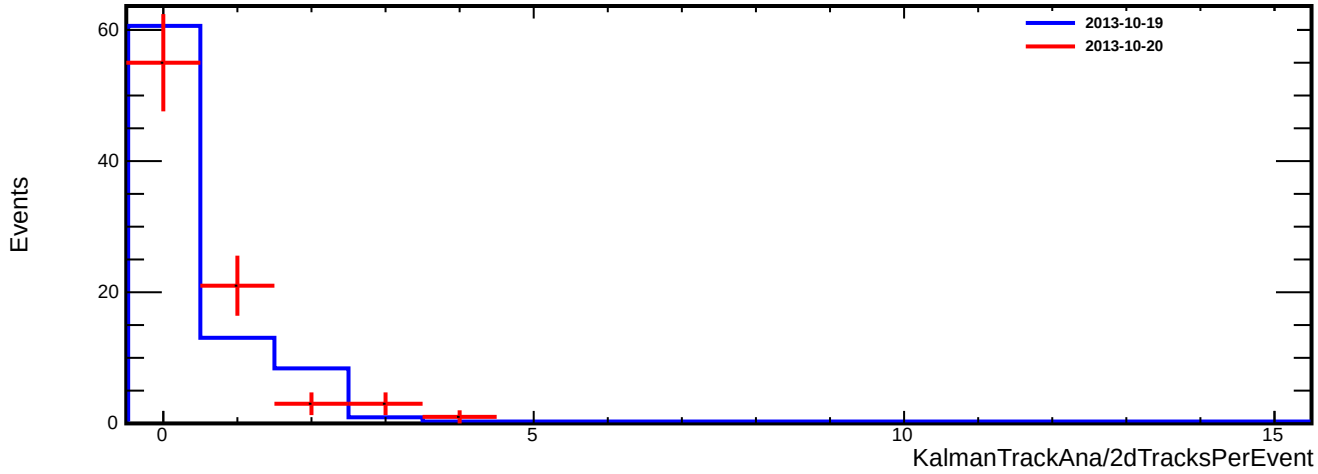

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
KalmanTrackAna/cosX

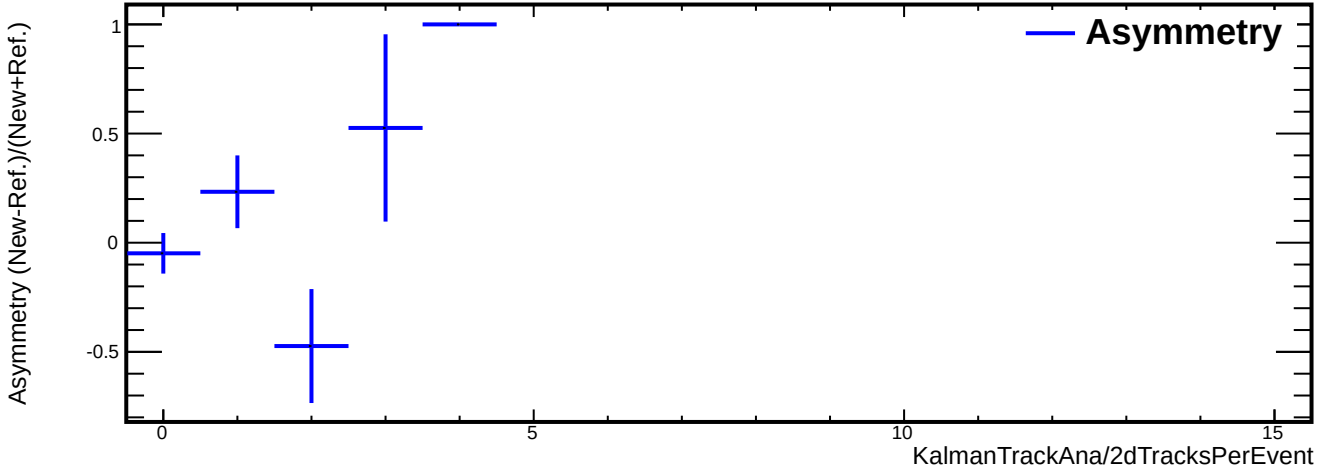

2013-10-19
2013-10-20
Events
0
1
2
3
4
5
-1
-0.5
0
0.5
1
KalmanTrackAna/cosZ

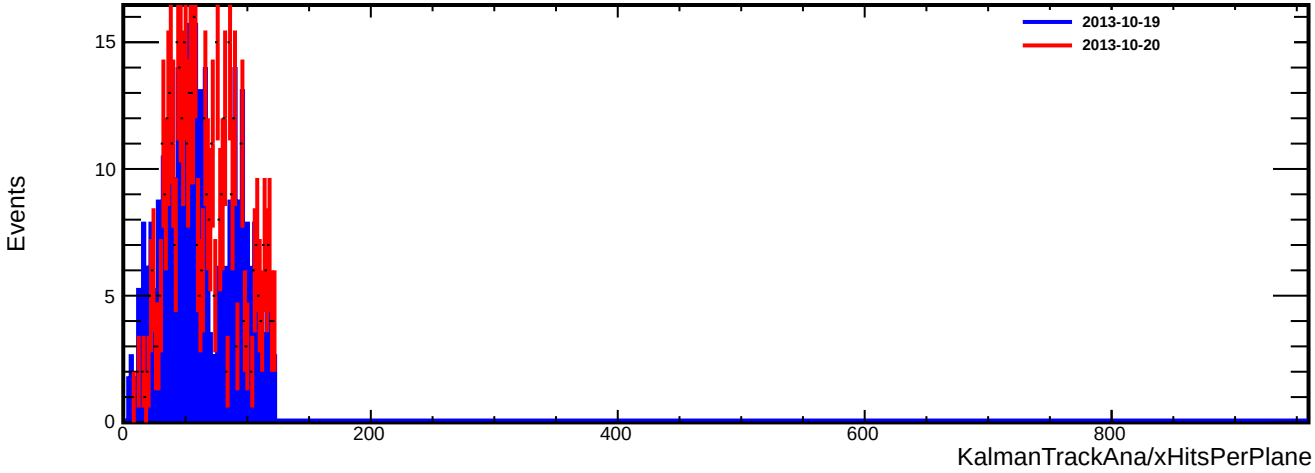

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
KalmanTrackAna/cosZ

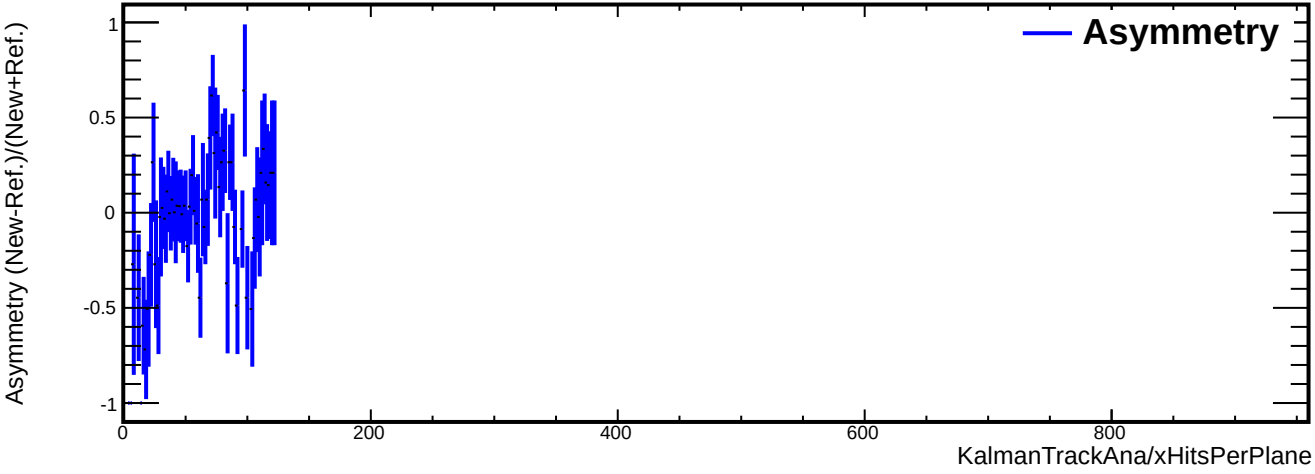

2013-10-19
2013-10-20
Events
0
10
20
30
40
50
0
5
10
15
20
KalmanTrackAna/tracksPerEvent

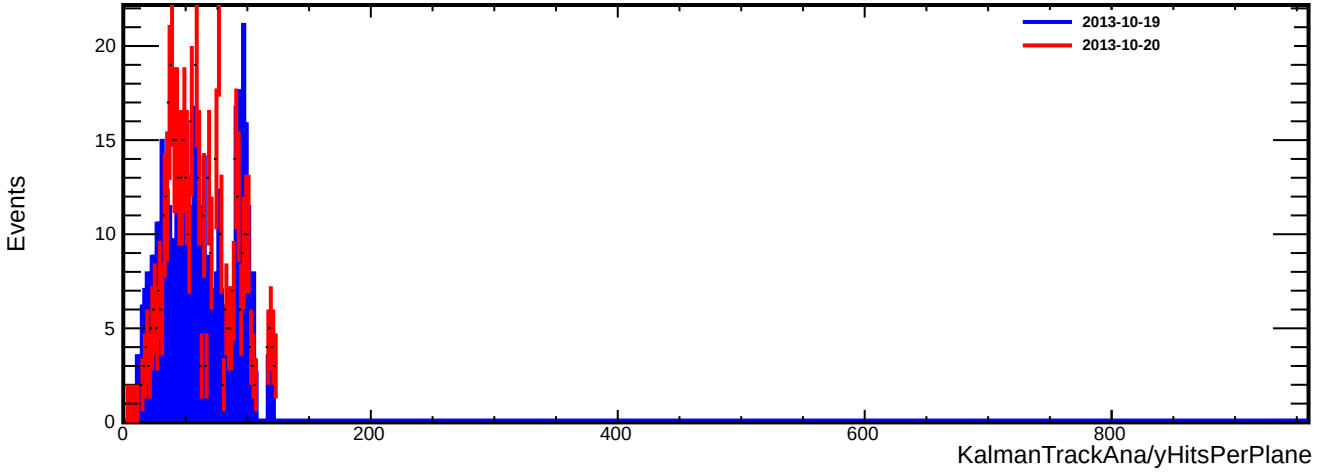

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.2
0
-0.2
0
5
10
15
20
KalmanTrackAna/tracksPerEvent

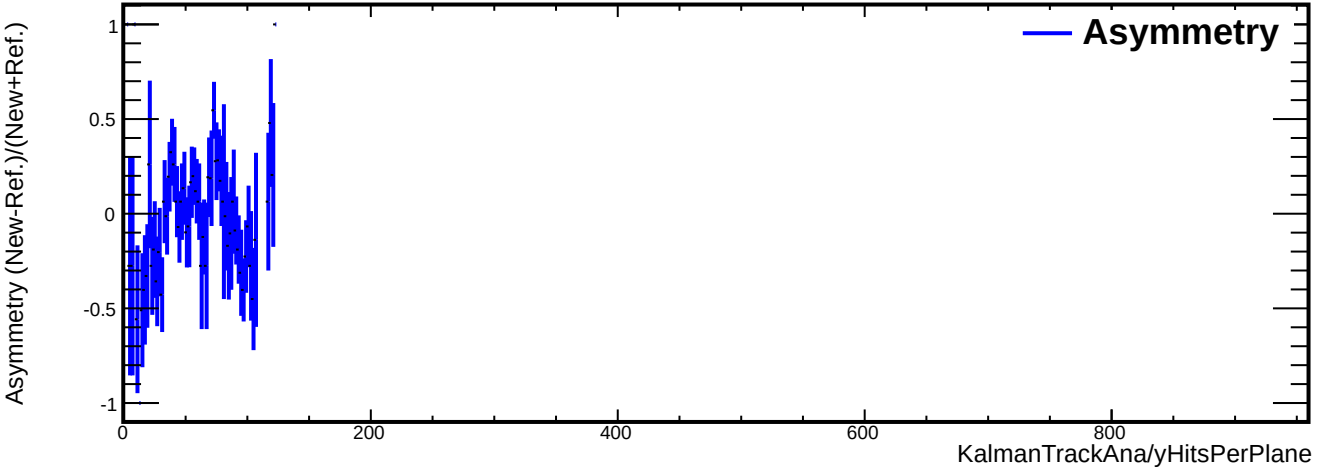

2013-10-19
2013-10-20
Events
60
40
20
0
0
5
10
15
KalmanTrackAna/2dTracksPerEvent

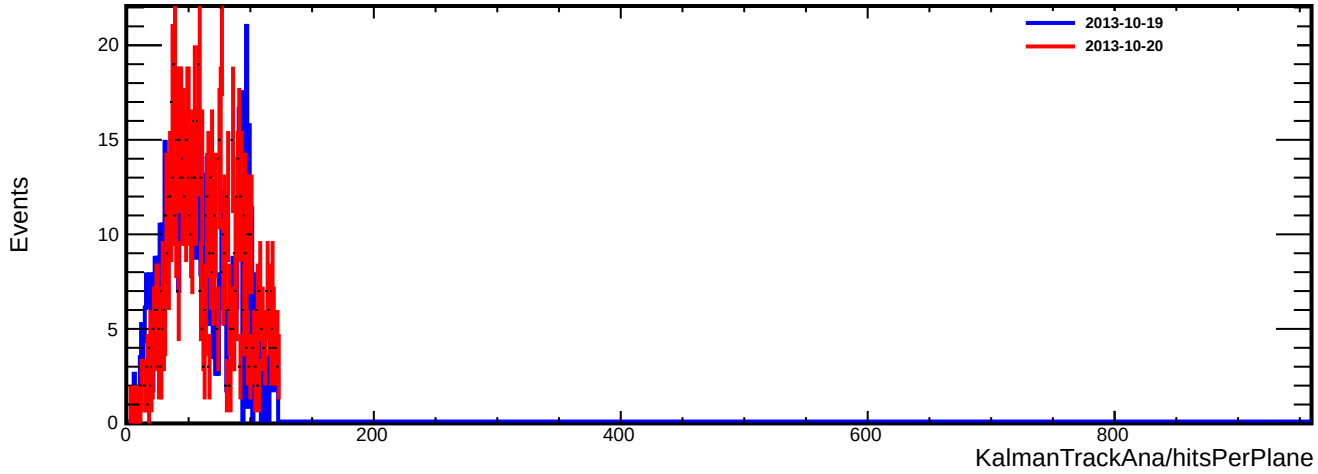

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
0
5
10
15
KalmanTrackAna/2dTracksPerEvent

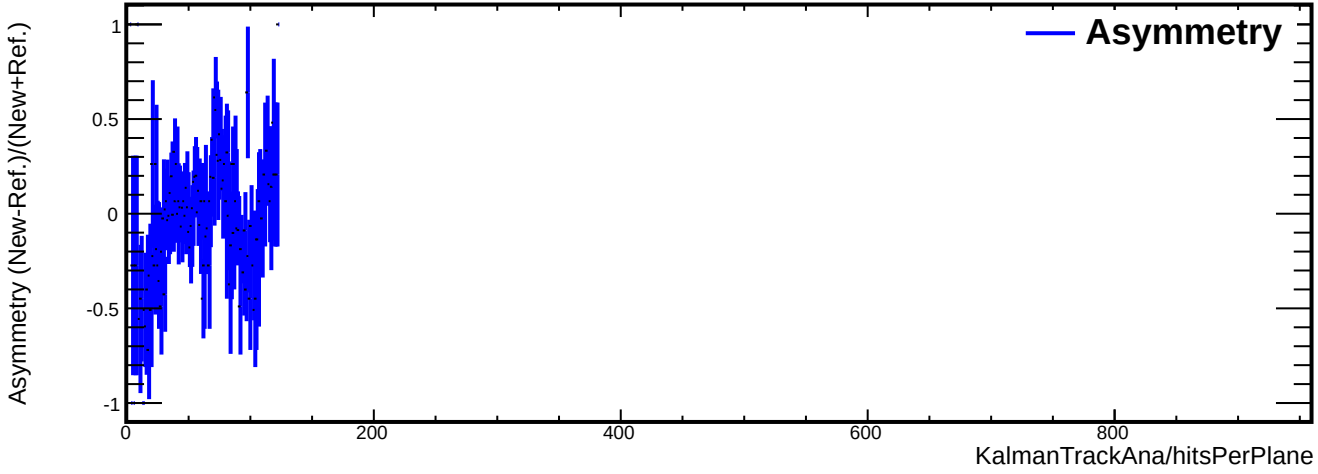

2013-10-19
2013-10-20
Events
0
5
10
15
0
200
400
600
800
KalmanTrackAna/xHitsPerPlane

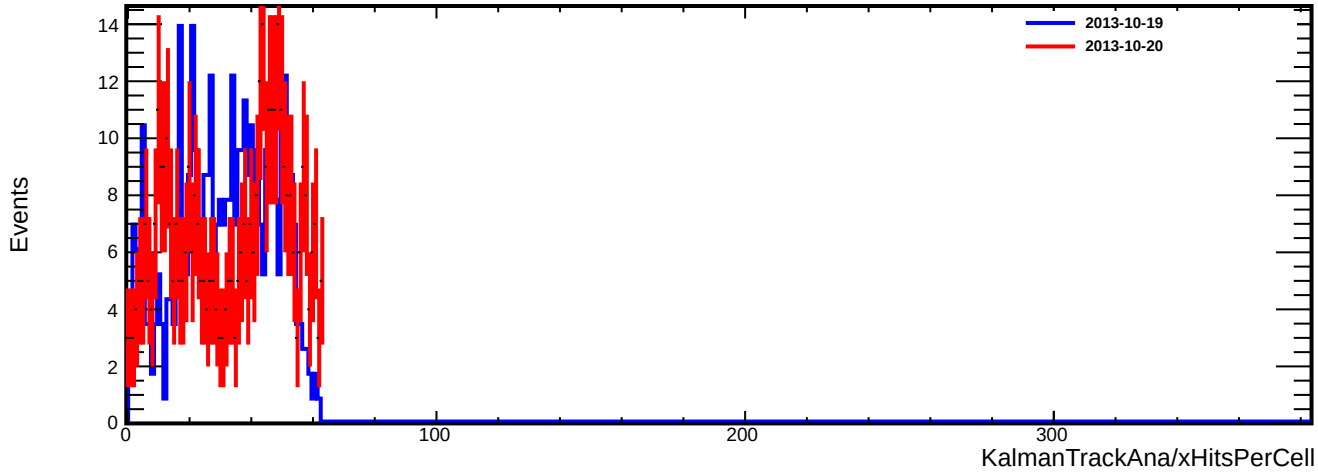

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
200
400
600
800
KalmanTrackAna/xHitsPerPlane

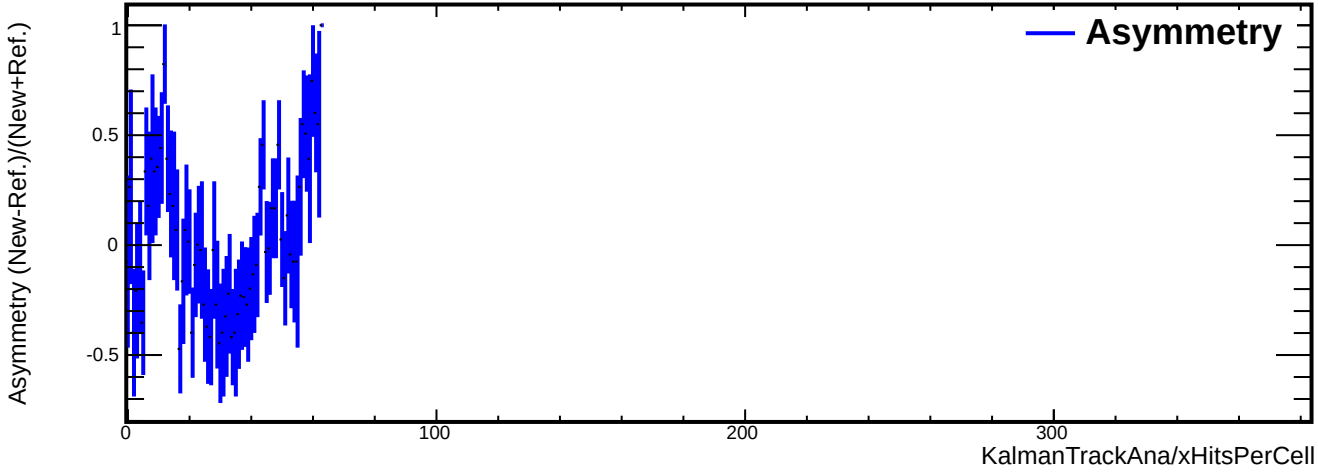

2013-10-19
2013-10-20
Events
0
5
10
15
20
0
200
400
600
800
KalmanTrackAna/yHitsPerPlane

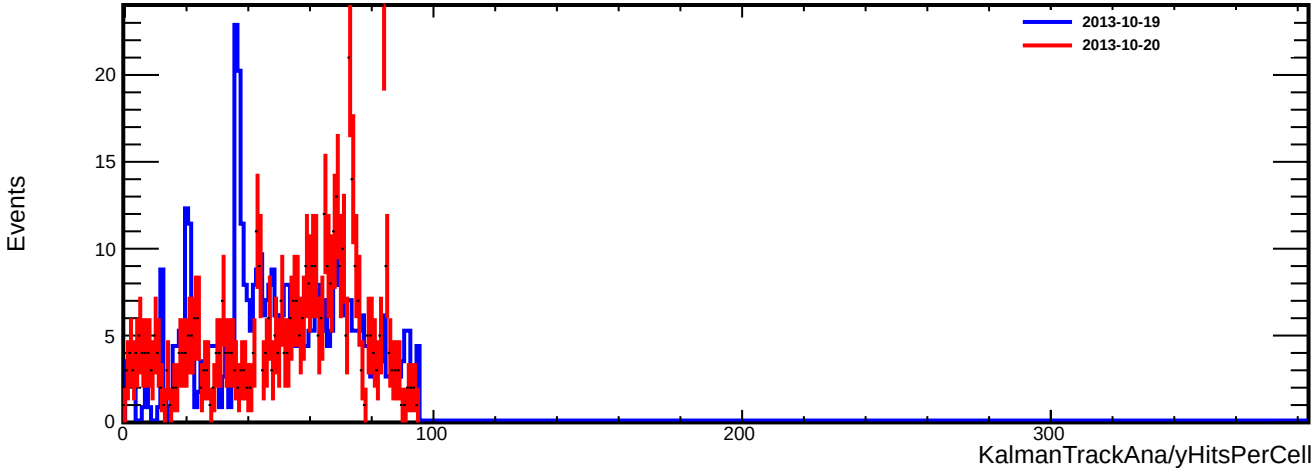

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
200
400
600
800
KalmanTrackAna/yHitsPerPlane

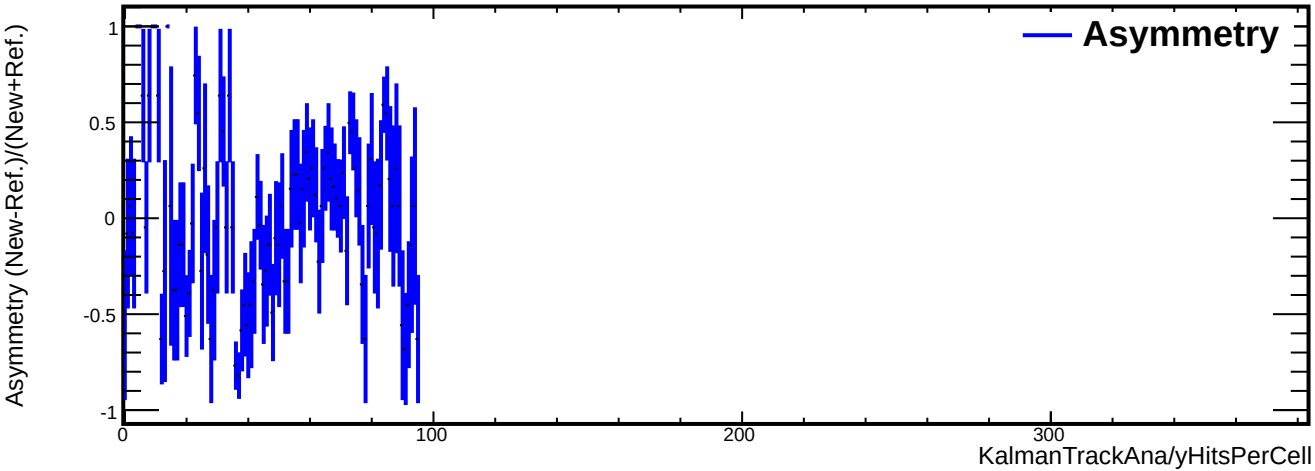

2013-10-19
2013-10-20
Events
0
5
10
15
20
0
200
400
600
800
KalmanTrackAna/hitsPerPlane

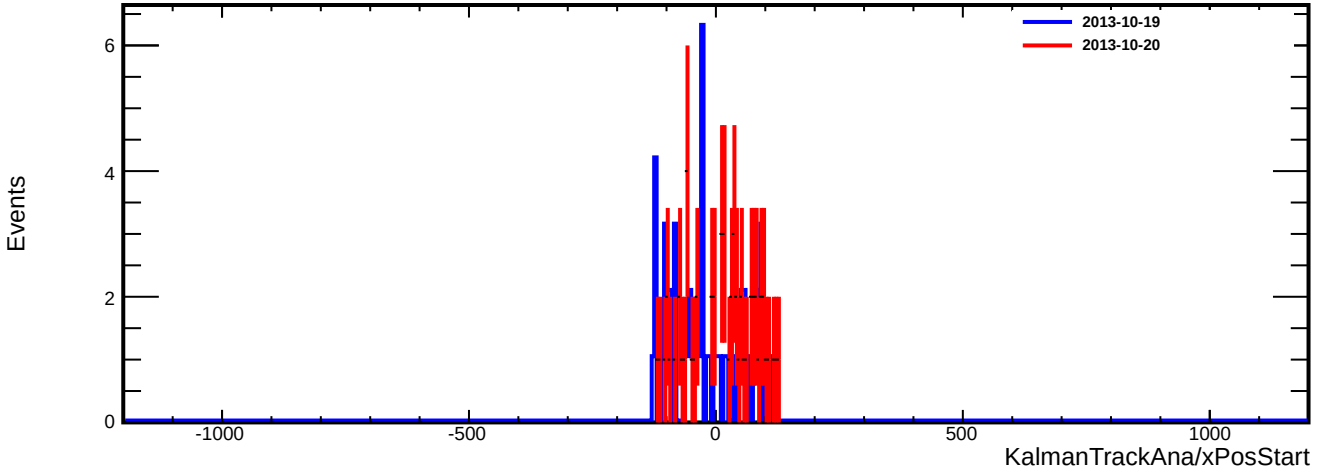

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
200
400
600
800
KalmanTrackAna/hitsPerPlane

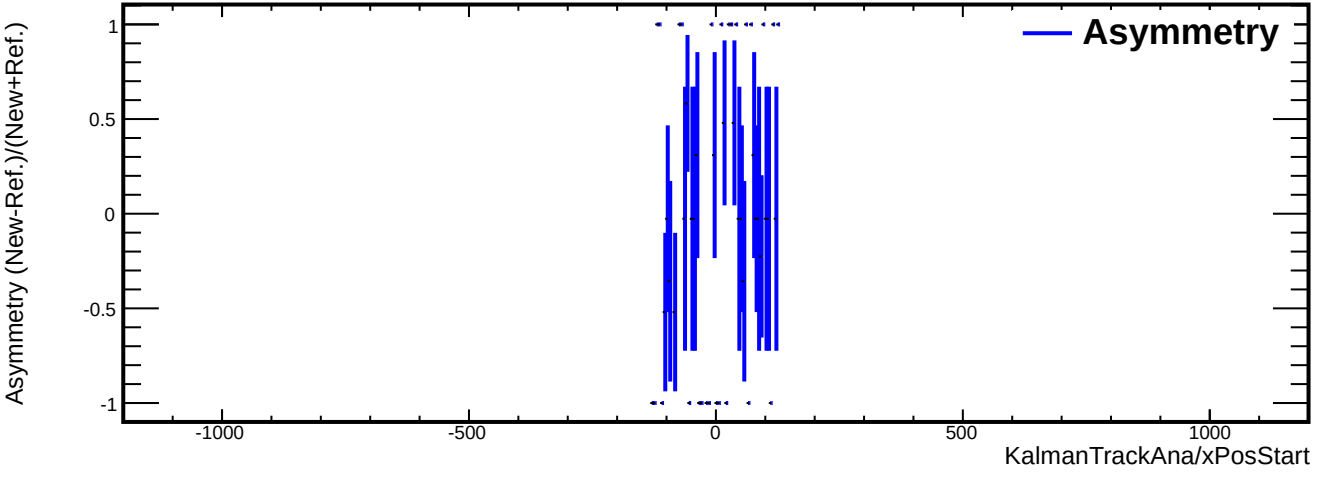

2013-10-19
2013-10-20
Events
0
2
4
6
8
10
12
14
0
100
200
300
KalmanTrackAna/xHitsPerCell

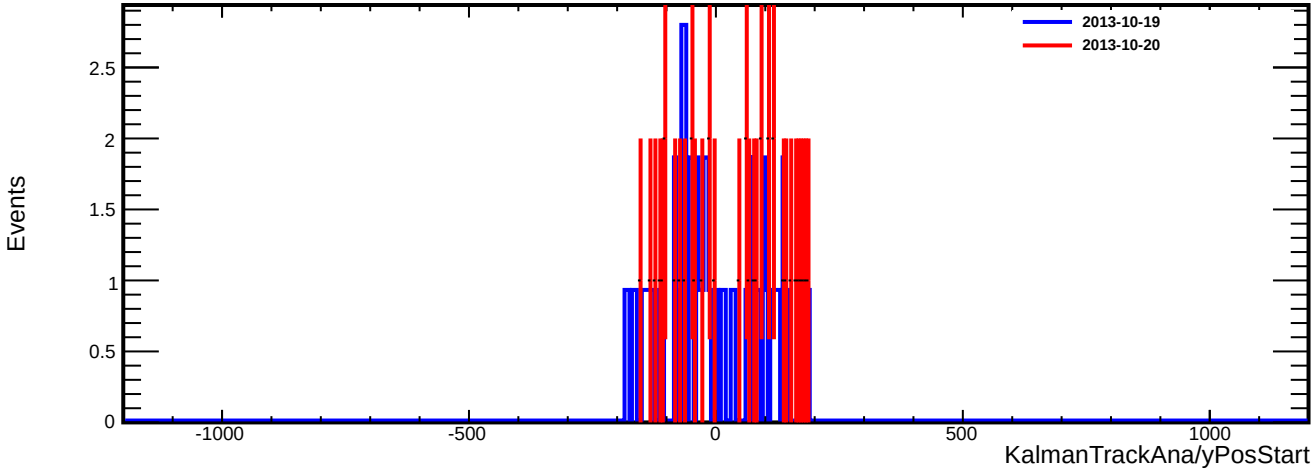

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
0
100
200
300
KalmanTrackAna/xHitsPerCell

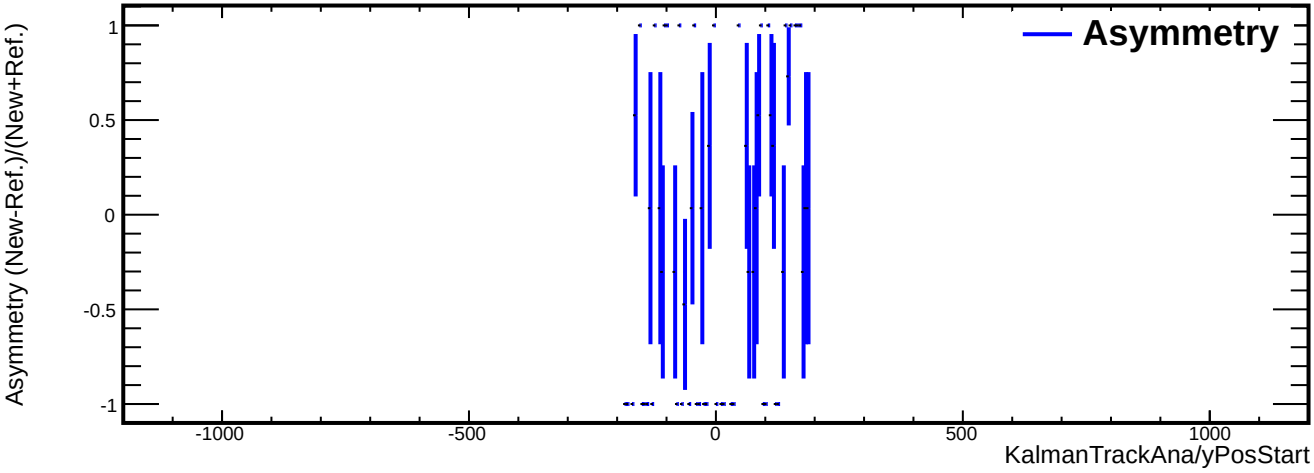

2013-10-19
2013-10-20
Events
0
5
10
15
20
0
100
200
300
KalmanTrackAna/yHitsPerCell

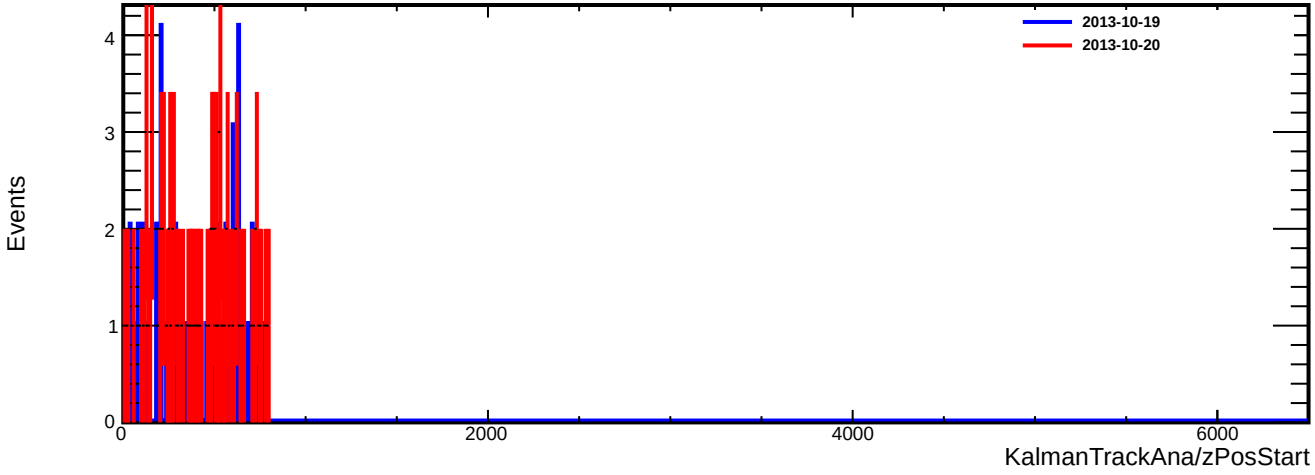

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
100
200
300
KalmanTrackAna/yHitsPerCell

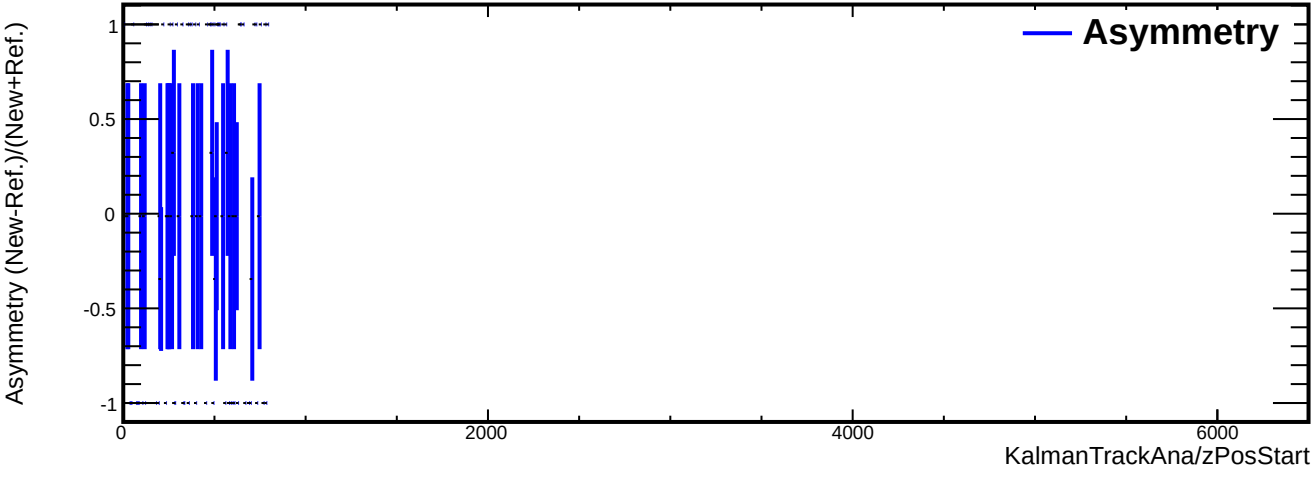

2013-10-19
2013-10-20
Events
0
2
4
6
-1000
-500
0
500
1000
KalmanTrackAna/xPosStart

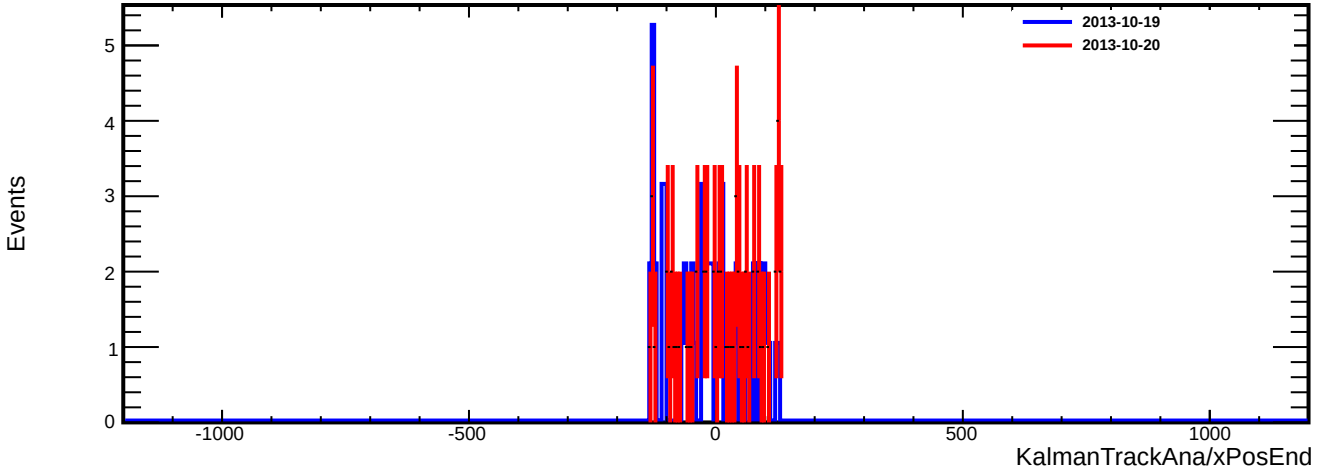

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1000
-500
0
500
1000
KalmanTrackAna/xPosStart

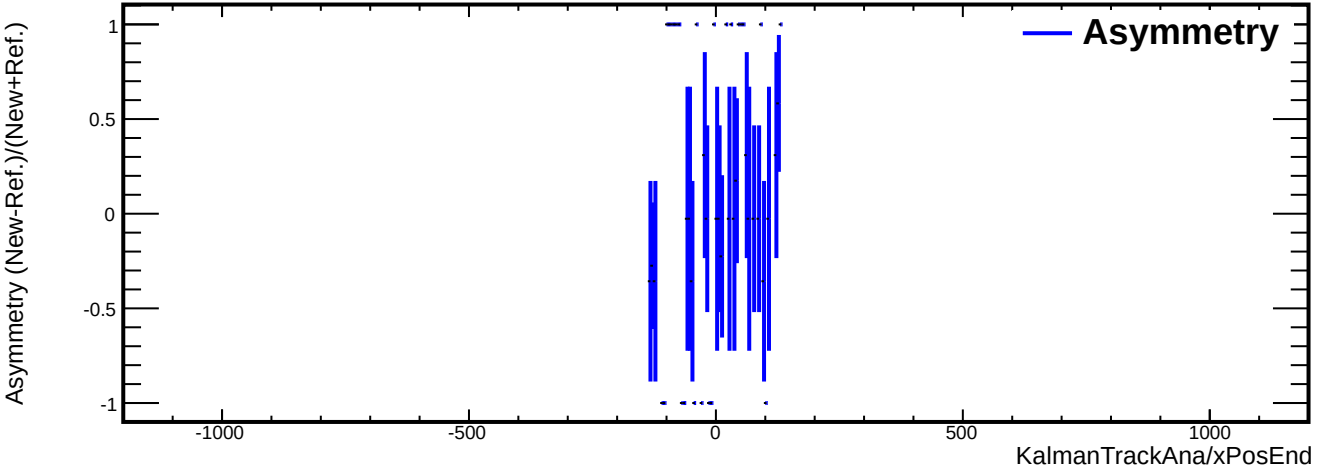

2013-10-19
2013-10-20
Events
2.5
2
1.5
1
0.5
0
-1000
-500
0
500
1000
KalmanTrackAna/yPosStart

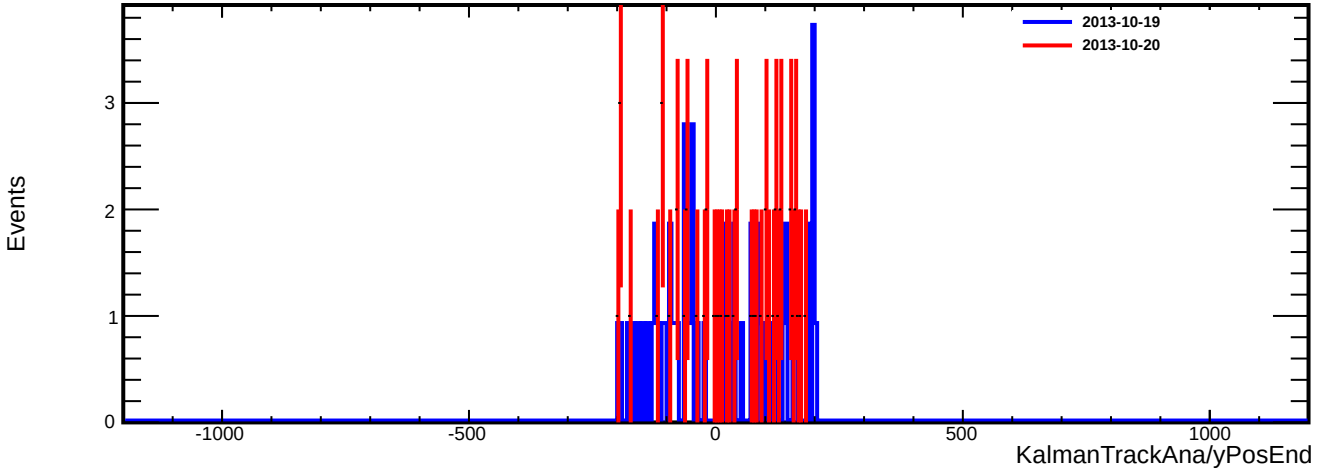

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1000
-500
0
500
1000
KalmanTrackAna/yPosStart

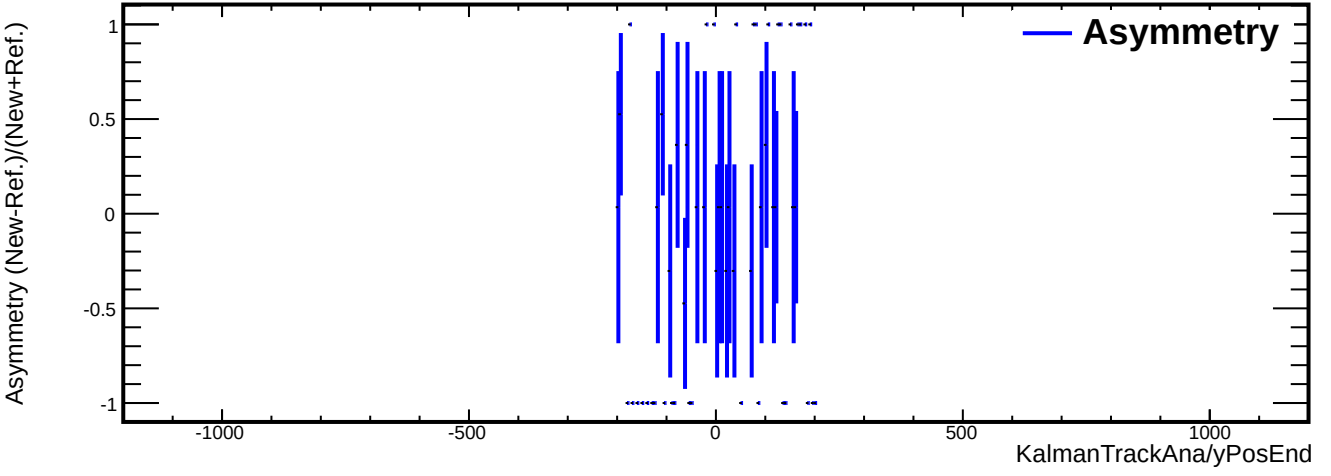

2013-10-19
2013-10-20
Events
0
1
2
3
4
0
2000
4000
6000
KalmanTrackAna/zPosStart

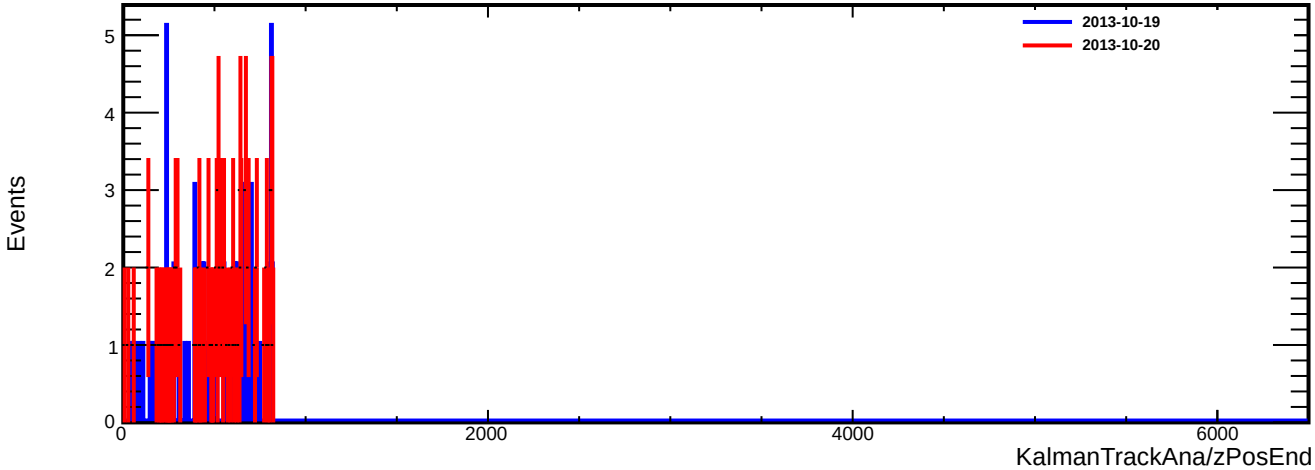

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
2000
4000
6000
KalmanTrackAna/zPosStart

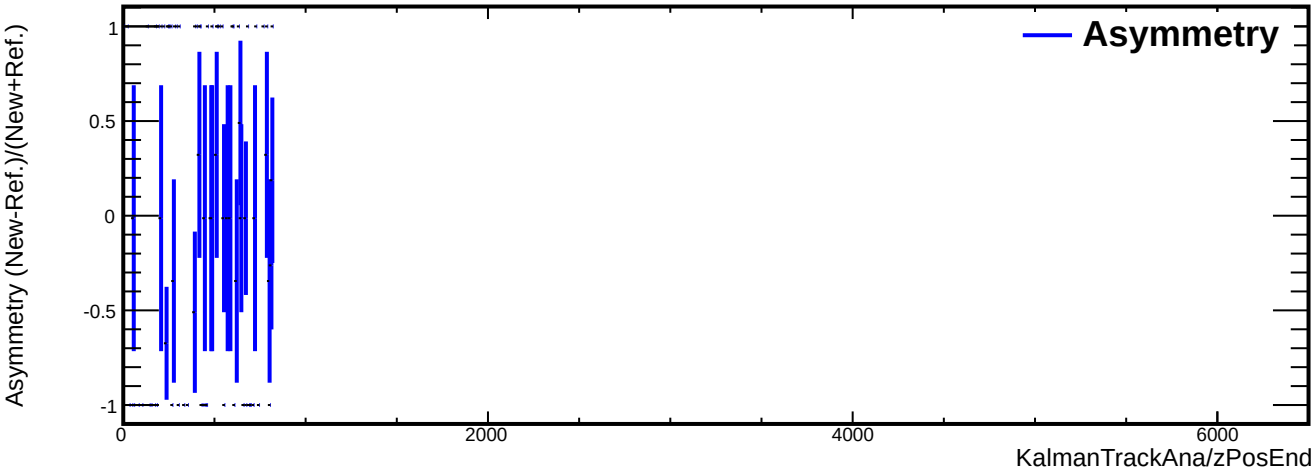

2013-10-19
2013-10-20
Events
0
1
2
3
4
5
-1000
-500
0
500
1000
KalmanTrackAna/xPosEnd

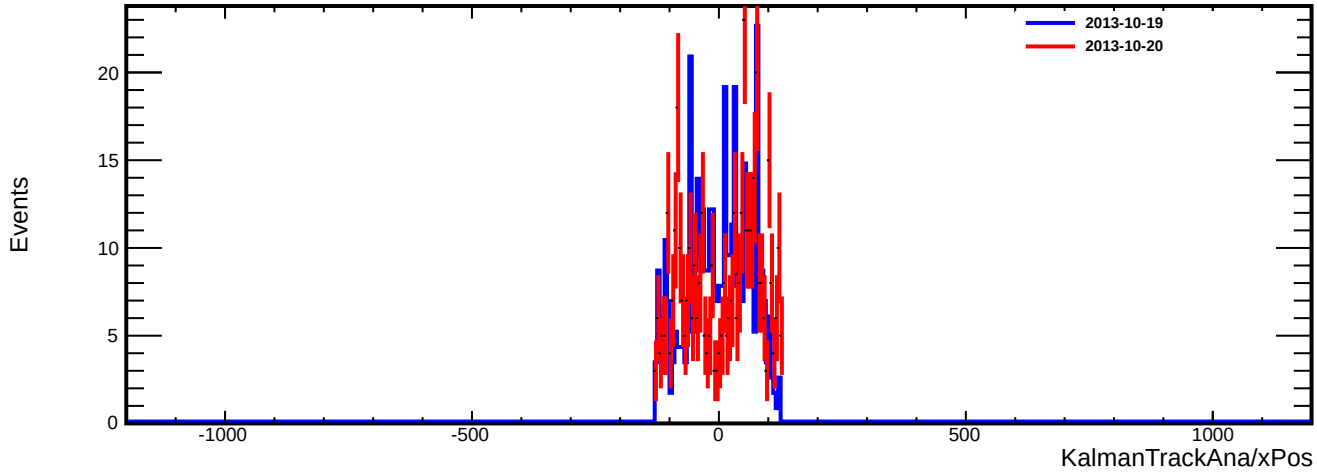

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1000
-500
0
500
1000
KalmanTrackAna/xPosEnd

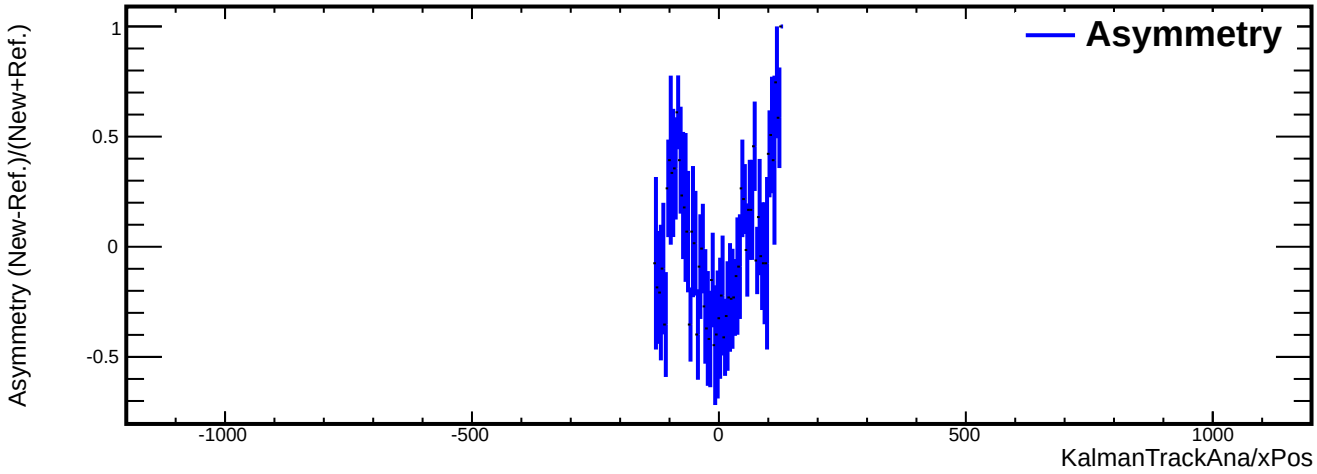

2013-10-19
2013-10-20
Events
0
1
2
3
-1000
-500
0
500
1000
KalmanTrackAna/yPosEnd

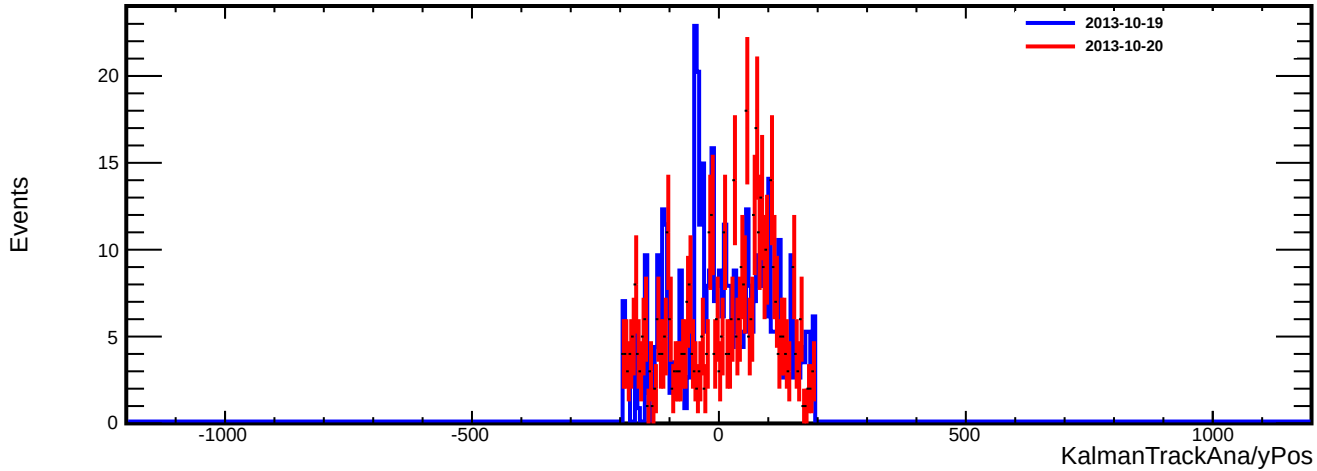

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1000
-500
0
500
1000
KalmanTrackAna/yPosEnd

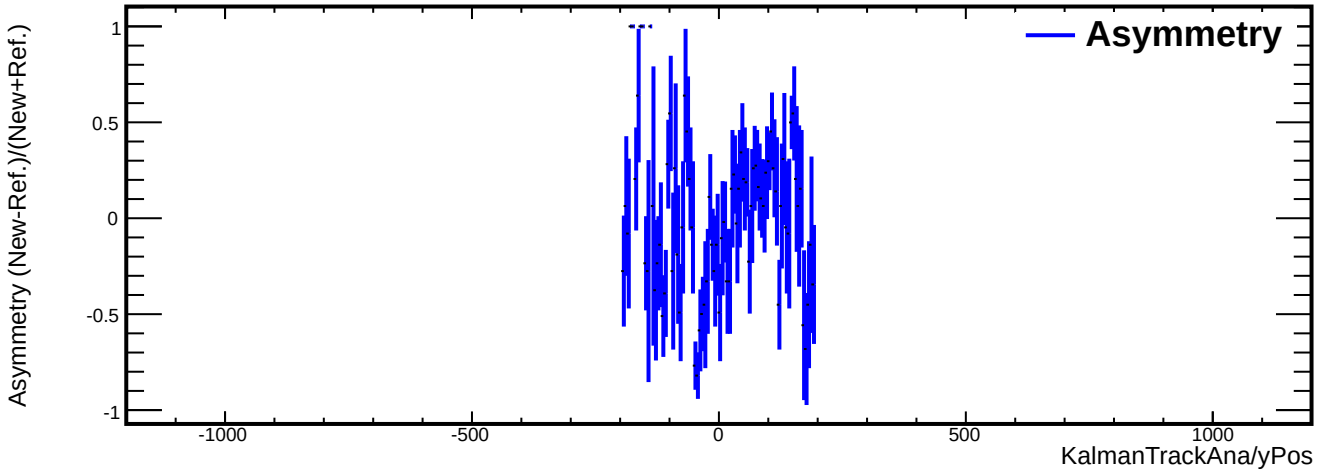

2013-10-19
2013-10-20
Events
0
1
2
3
4
5
0
2000
4000
6000
KalmanTrackAna/zPosEnd

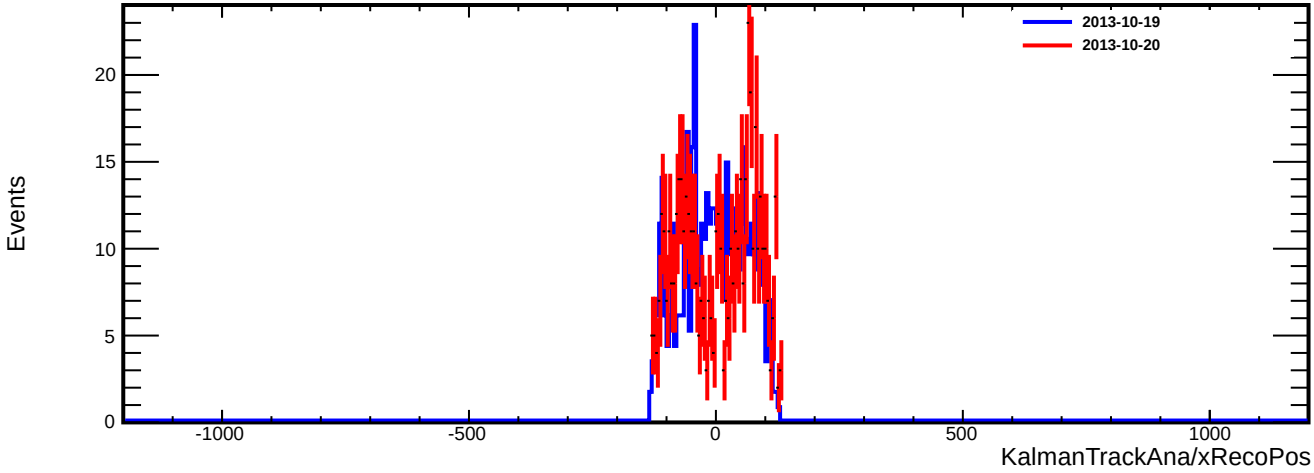

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
2000
4000
6000
KalmanTrackAna/zPosEnd

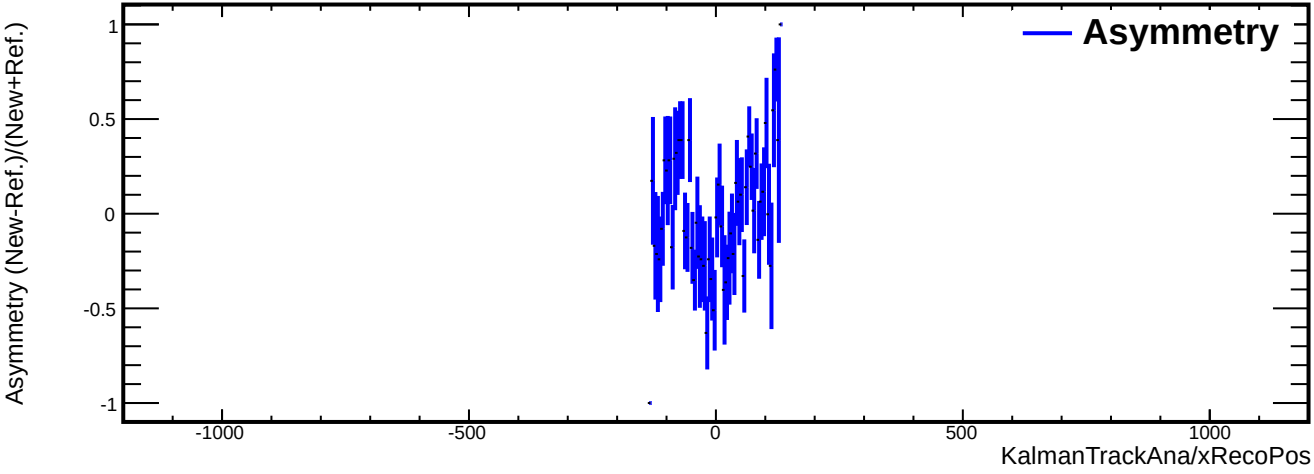

2013-10-19
2013-10-20
Events
0
5
10
15
20
-1000
-500
0
500
1000
KalmanTrackAna/xPos

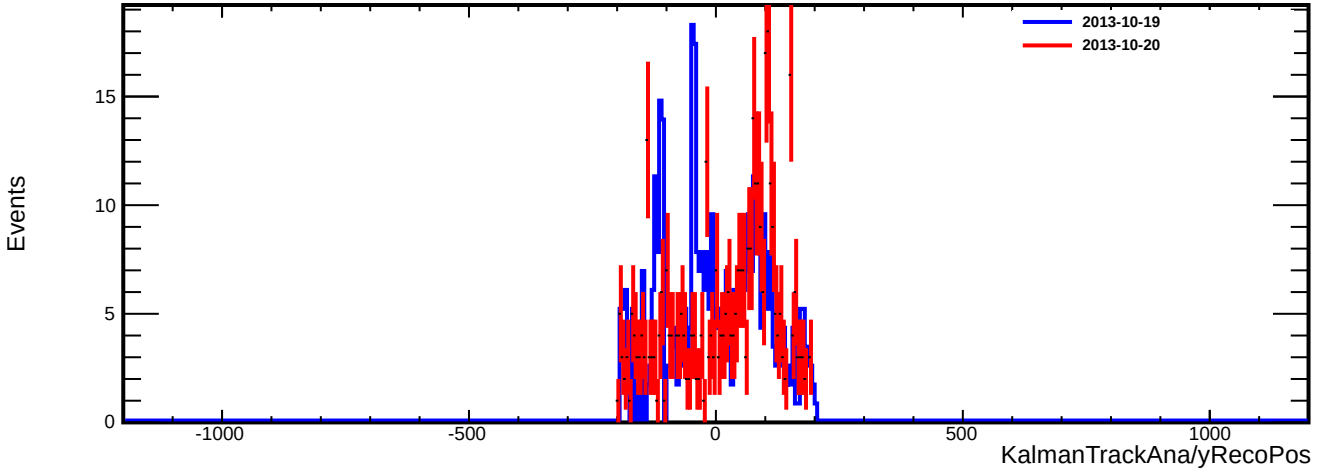

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1000
-500
0
500
1000
KalmanTrackAna/xPos

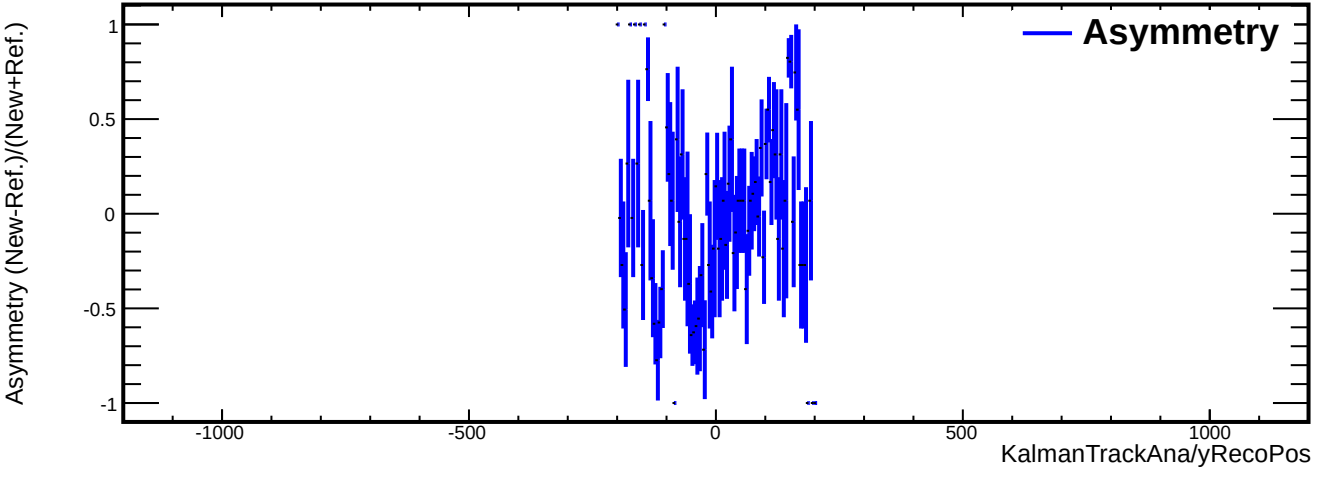

2013-10-19
2013-10-20
Events
0
5
10
15
20
-1000
-500
0
500
1000
KalmanTrackAna/yPos

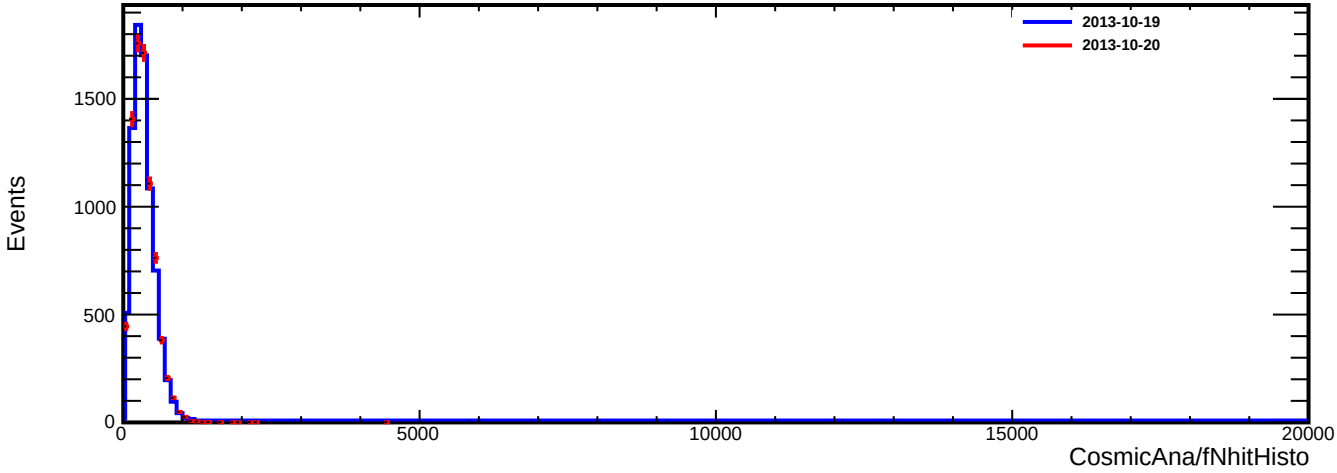

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1000
-500
0
500
1000
KalmanTrackAna/yPos

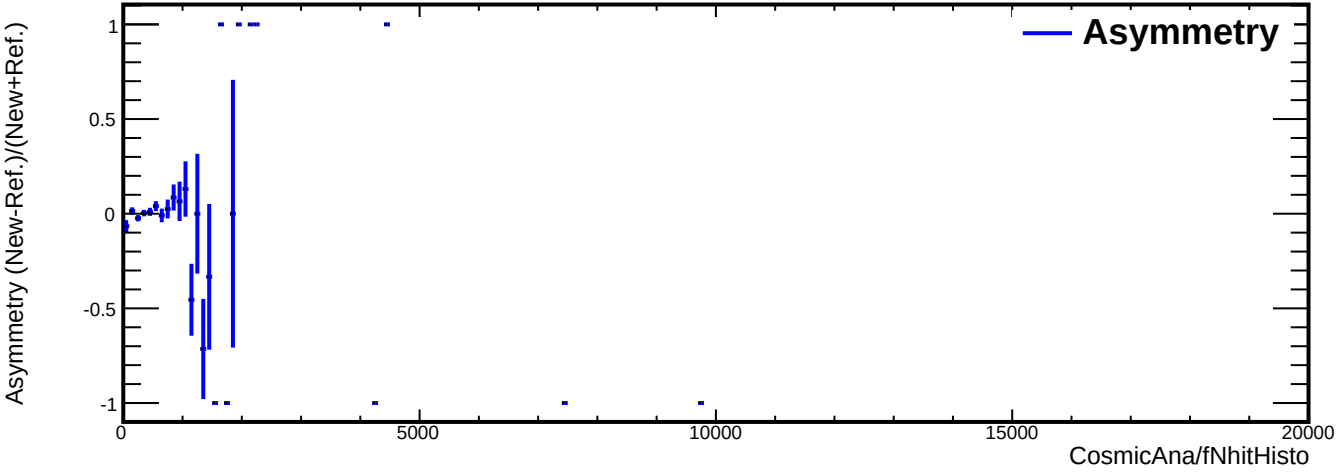

2013-10-19
2013-10-20
Events
0
5
10
15
20
-1000
-500
0
500
1000
KalmanTrackAna/xRecoPos

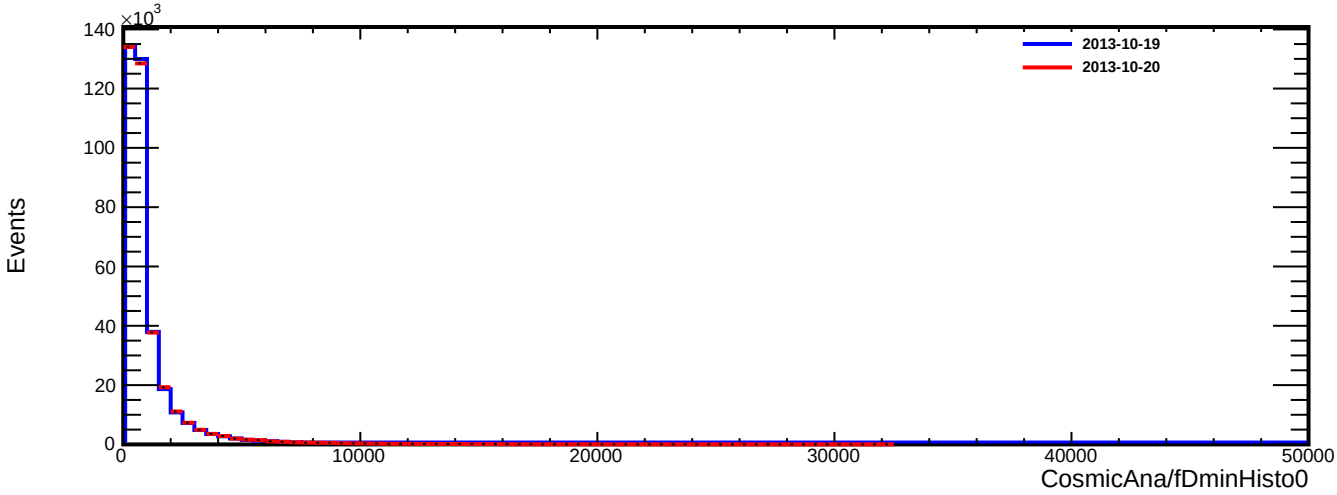

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1000
-500
0
500
1000
KalmanTrackAna/xRecoPos

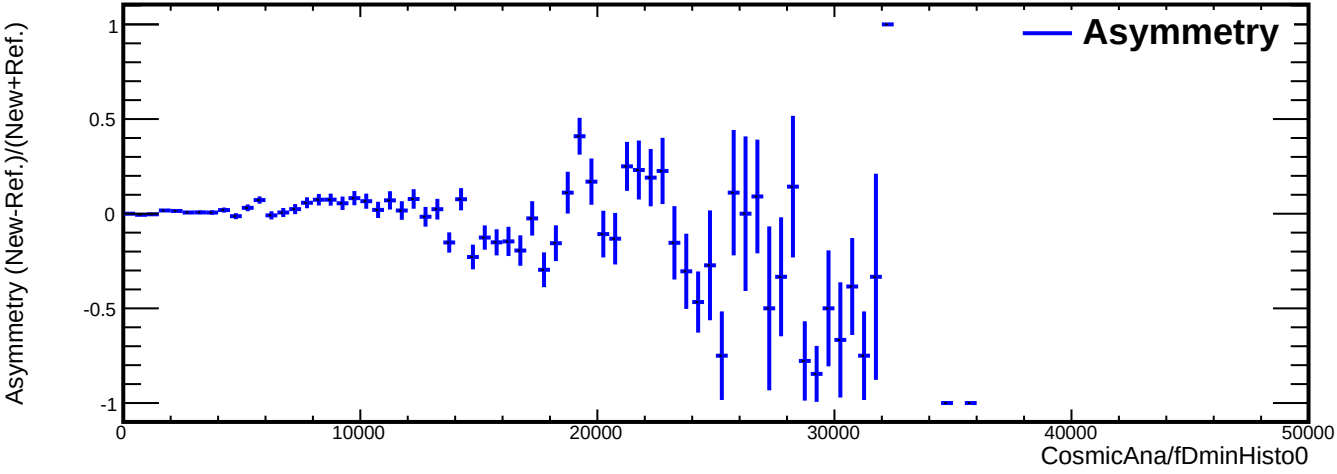

2013-10-19
2013-10-20
Events
0
5
10
15
-1000
-500
0
500
1000
KalmanTrackAna/yRecoPos

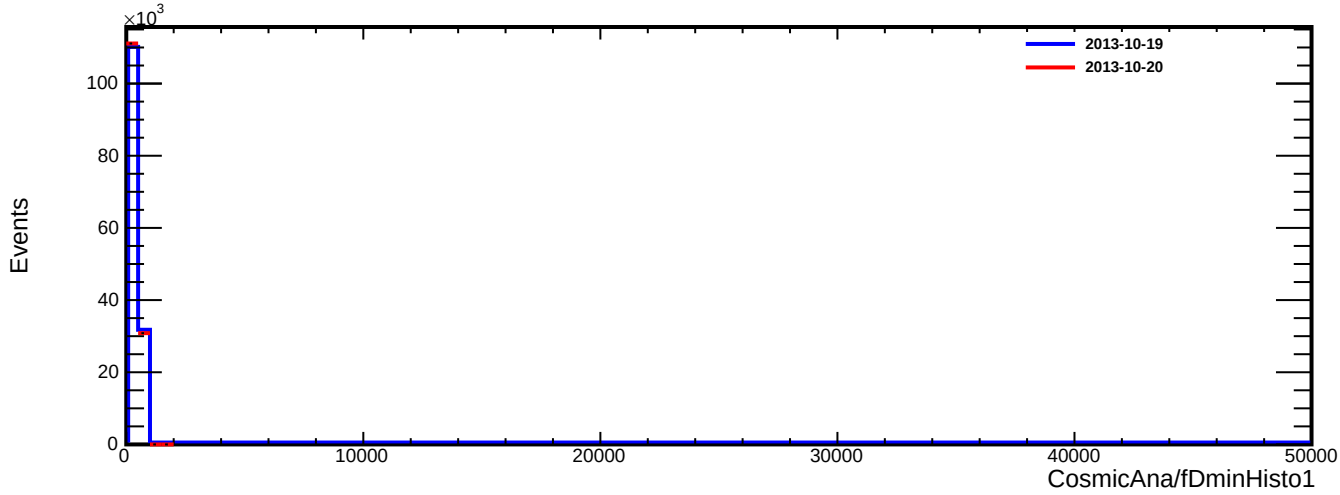

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1000
-500
0
500
1000
KalmanTrackAna/yRecoPos

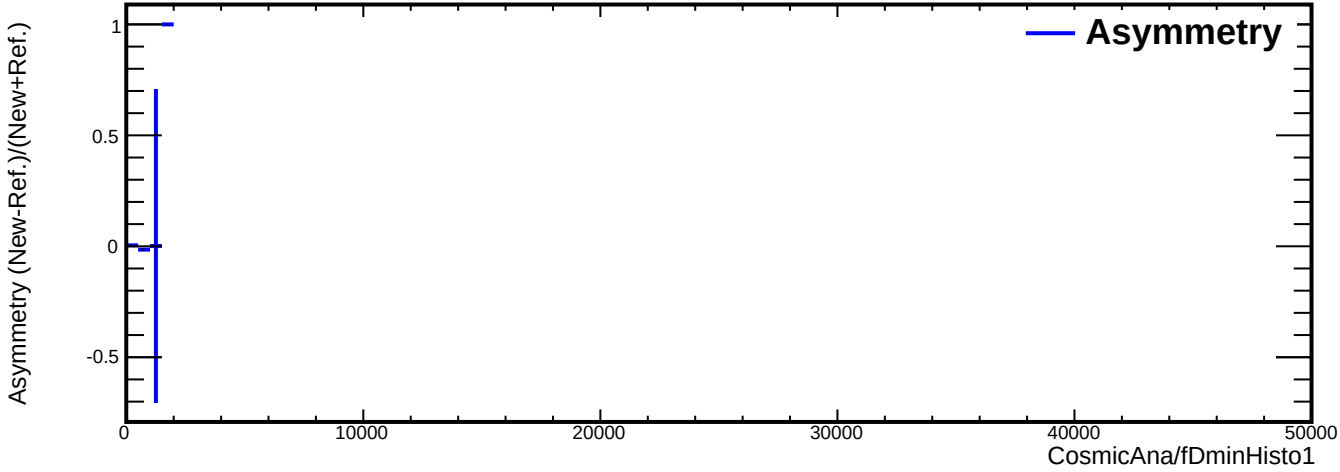

2013-10-19
2013-10-20
Events
1500
1000
500
0
0
5000
10000
15000
20000
CosmicAna/fNhitHisto

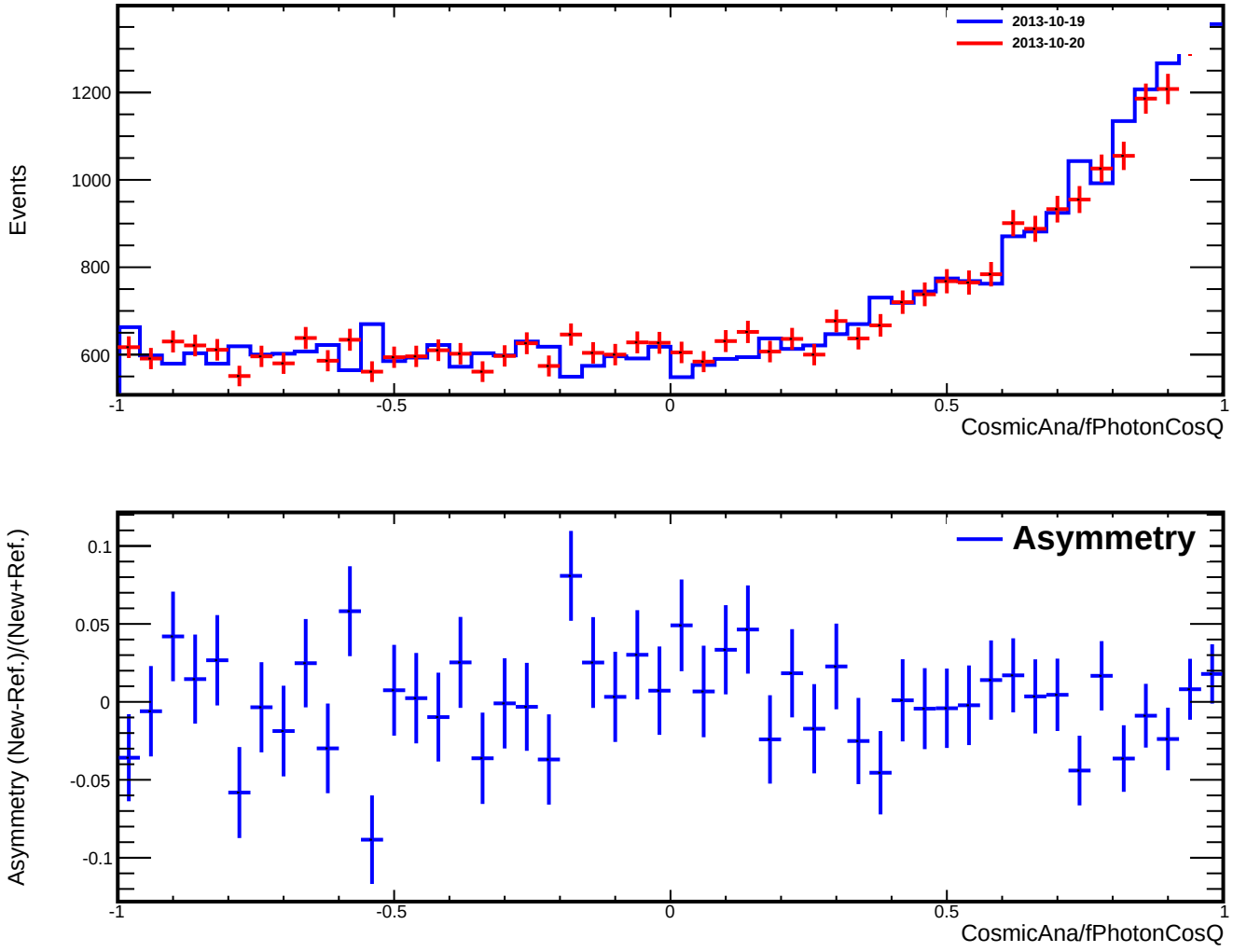

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
5000
10000
15000
20000
CosmicAna/fNhitHisto

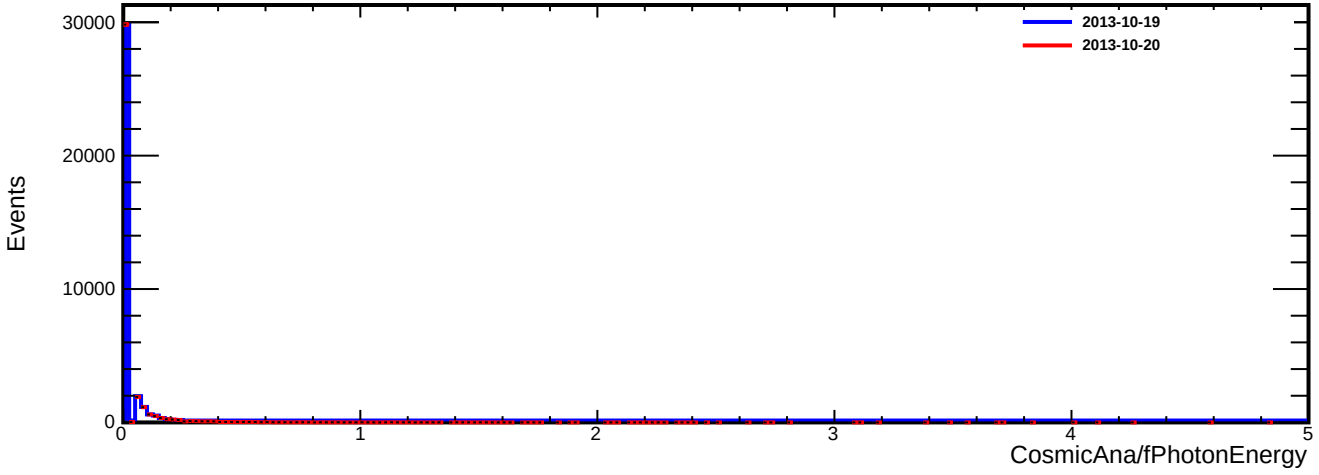

×10^3
140
120
100
80
60
40
20
0
Events
0
10000
20000
30000
40000
50000
CosmicAna/fDminHisto0
2013-10-19
2013-10-20

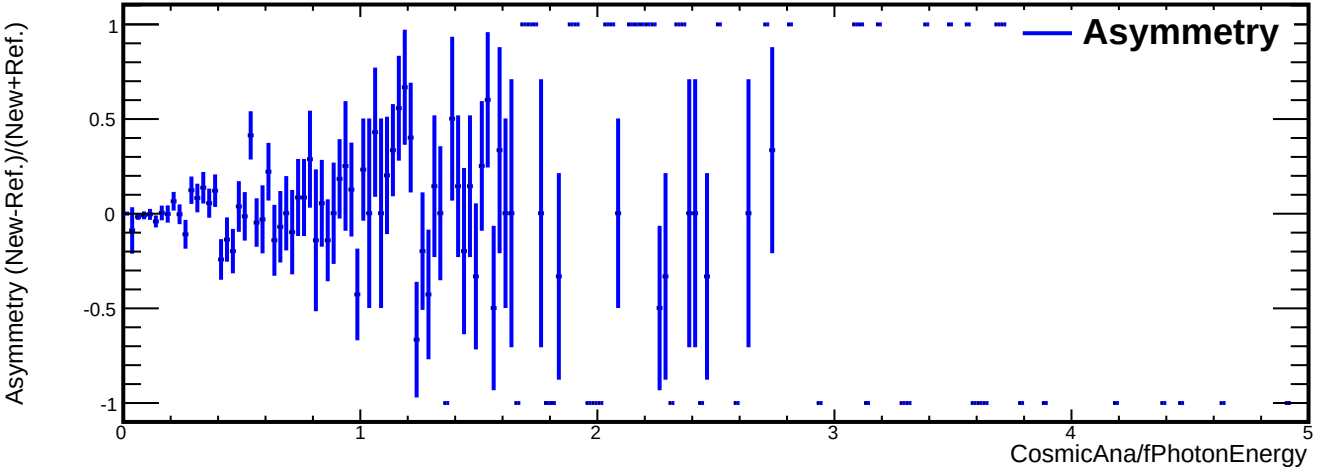

1
0.5
0
-0.5
-1
Asymmetry (New-Ref.)/(New+Ref.)
0
10000
20000
30000
40000
50000
CosmicAna/fDminHisto0
Asymmetry

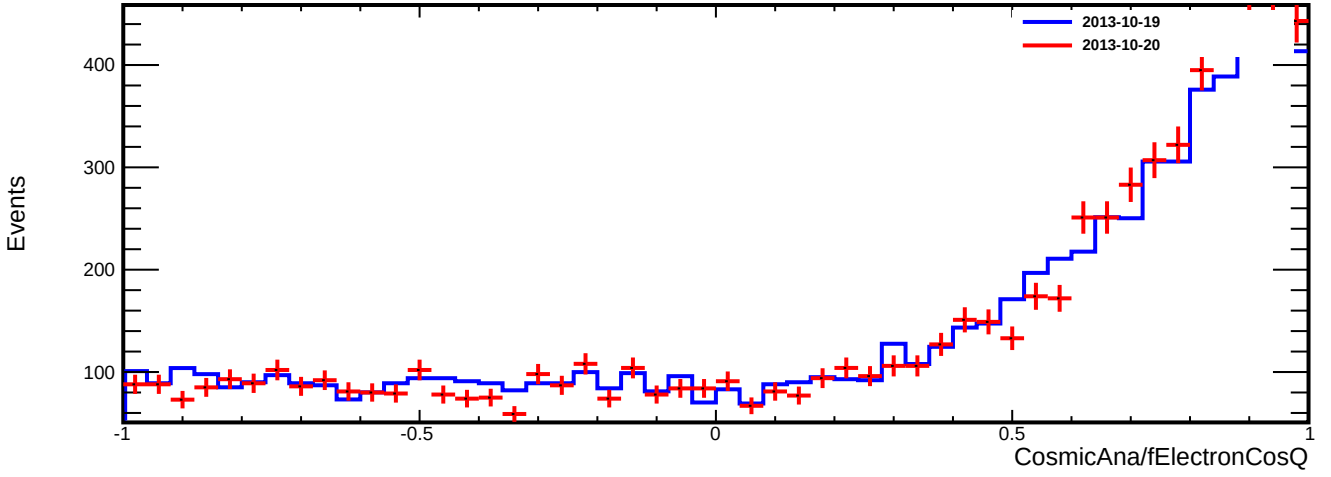

×10^3
Events
100
80
60
40
20
0
0
10000
20000
30000
40000
50000
CosmicAna/fDminHisto1
2013-10-19
2013-10-20

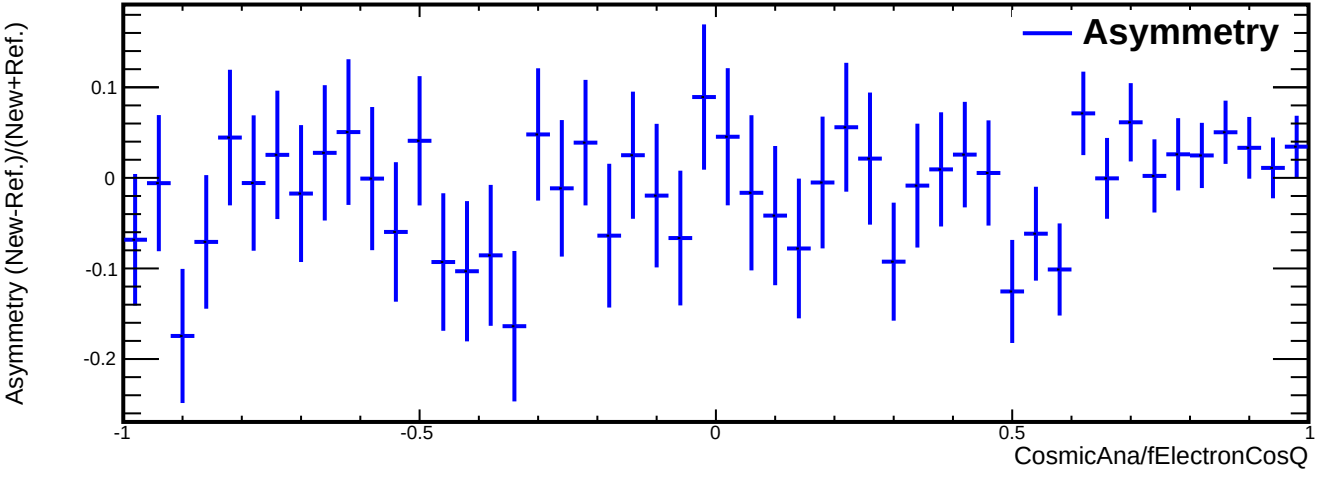

Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
0
10000
20000
30000
40000
50000
CosmicAna/fDminHisto1
Asymmetry

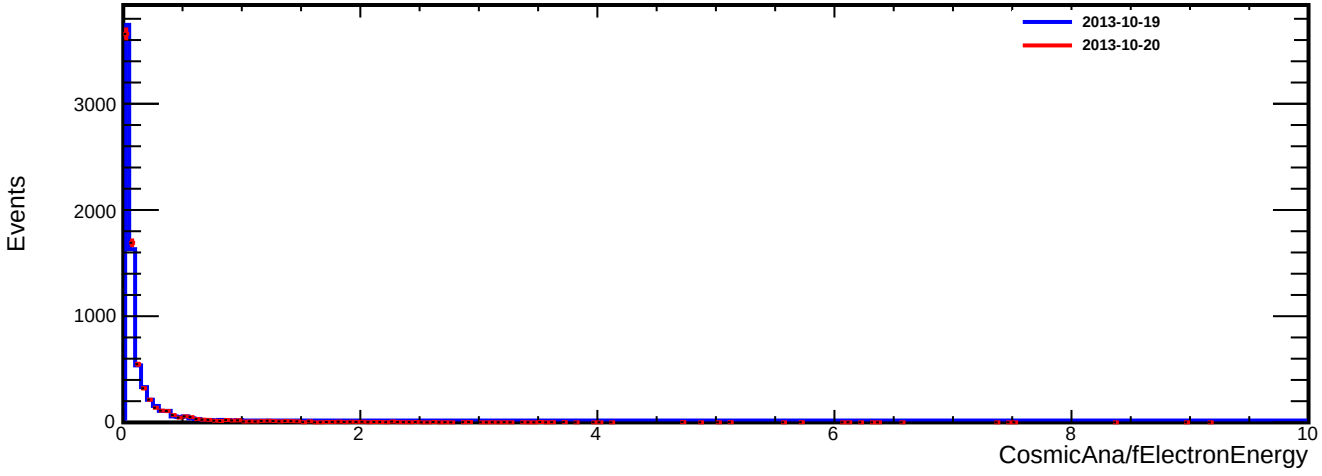

2013-10-19
2013-10-20
Events
1200
1000
800
600
-1
-0.5
0
0.5
1
CosmicAna/fPhotonCosQ
Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.1
0.05
0
-0.05
-0.1
-1
-0.5
0
0.5
1
CosmicAna/fPhotonCosQ

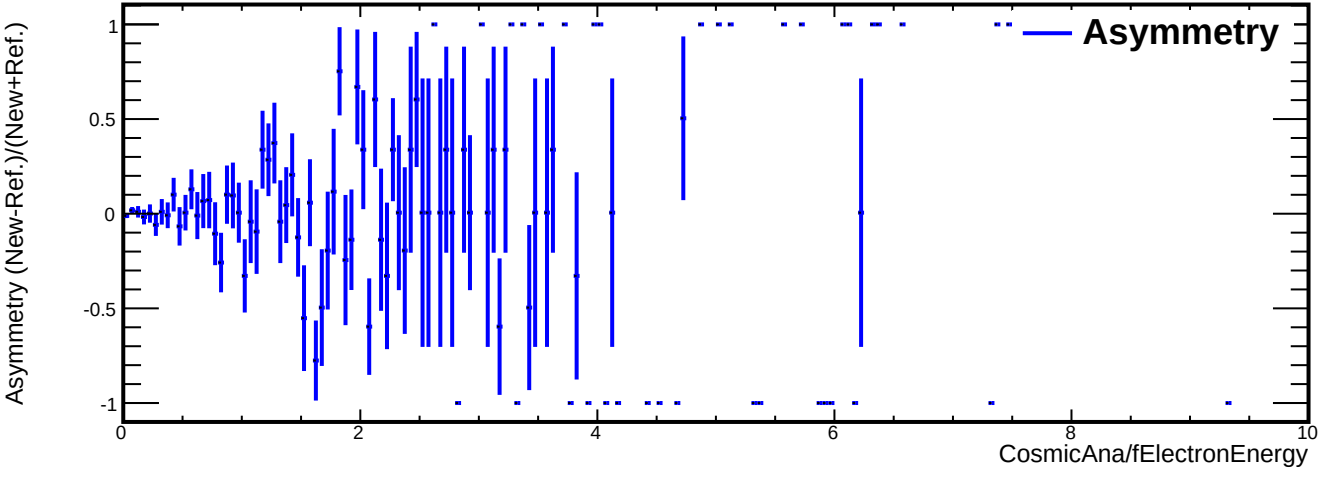

2013-10-19
2013-10-20
Events
30000
20000
10000
0
0
1
2
3
4
5
CosmicAna/fPhotonEnergy

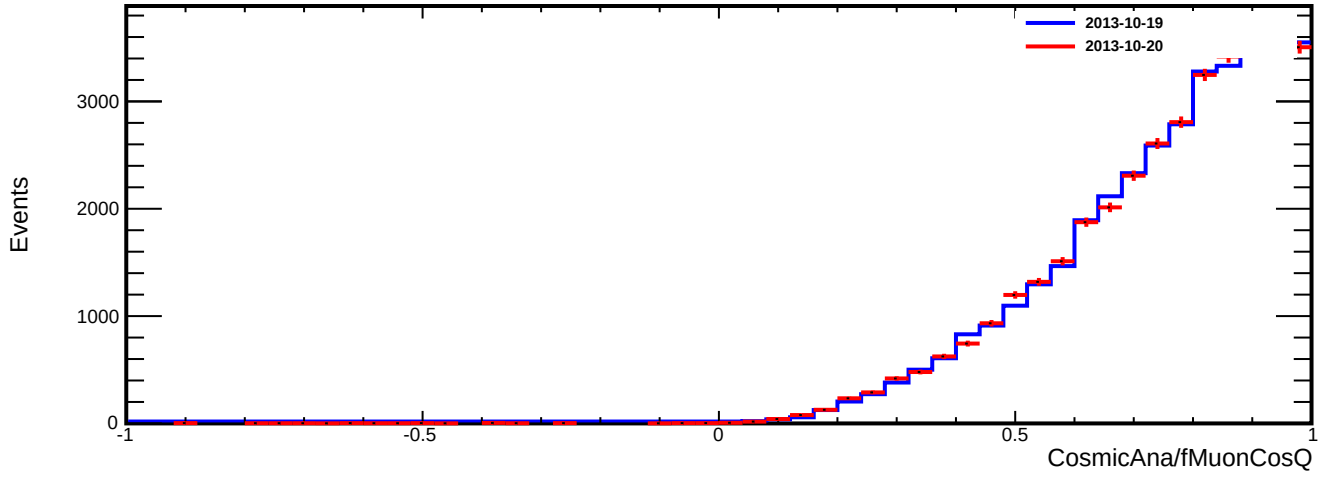

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
1
2
3
4
5
CosmicAna/fPhotonEnergy

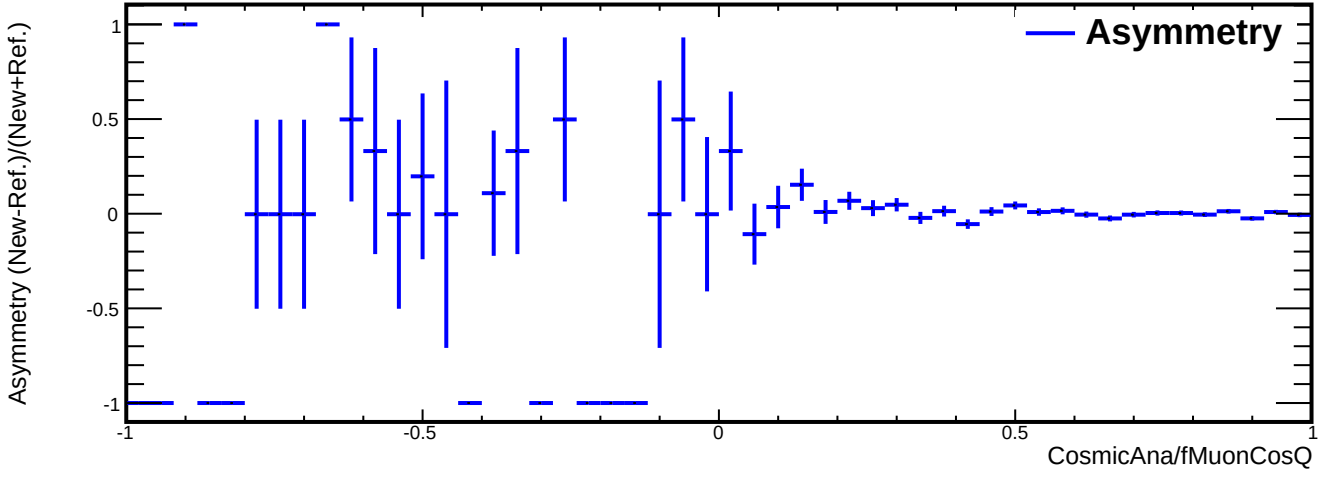

2013-10-19
2013-10-20
Events
400
300
200
100
-1
-0.5
0
0.5
1
CosmicAna/fElectronCosQ

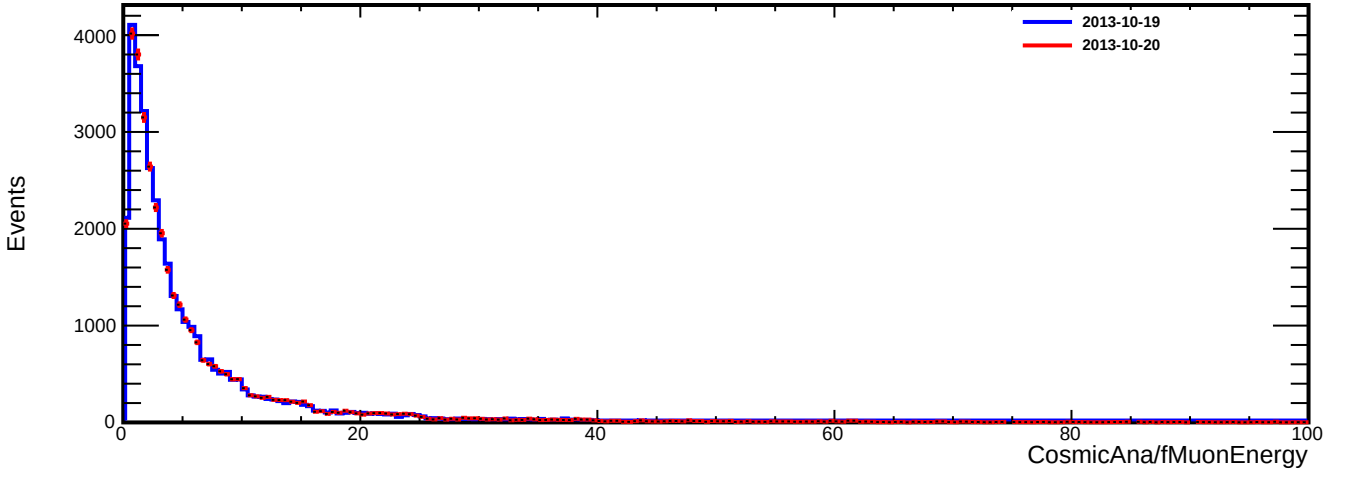

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.1
0
-0.1
-0.2
-1
-0.5
0
0.5
1
CosmicAna/fElectronCosQ

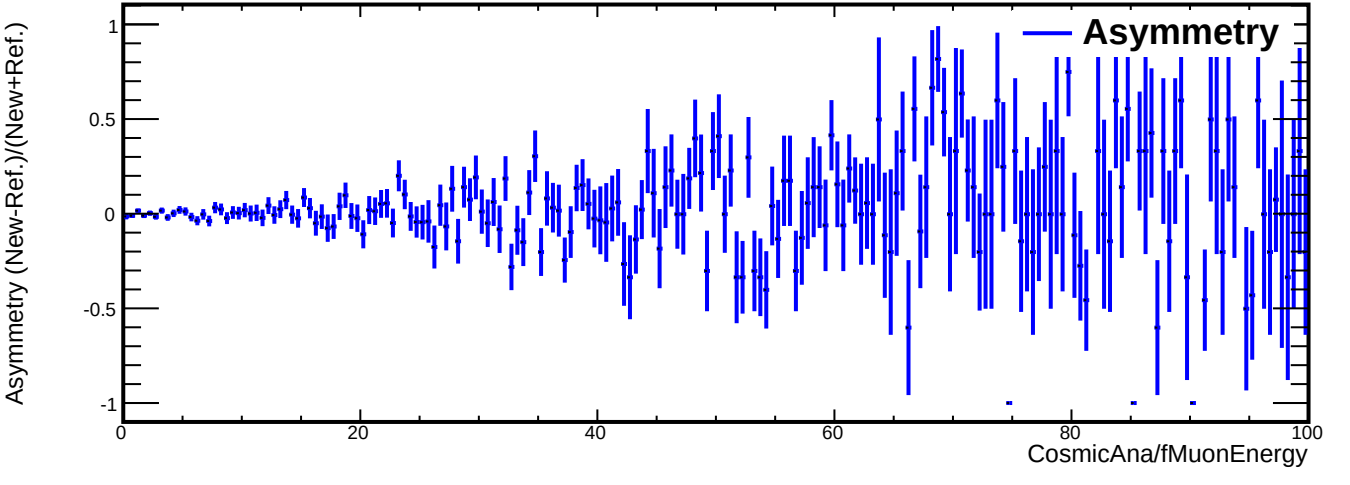

2013-10-19
2013-10-20
Events
3000
2000
1000
0
0
2
4
6
8
10
CosmicAna/fElectronEnergy

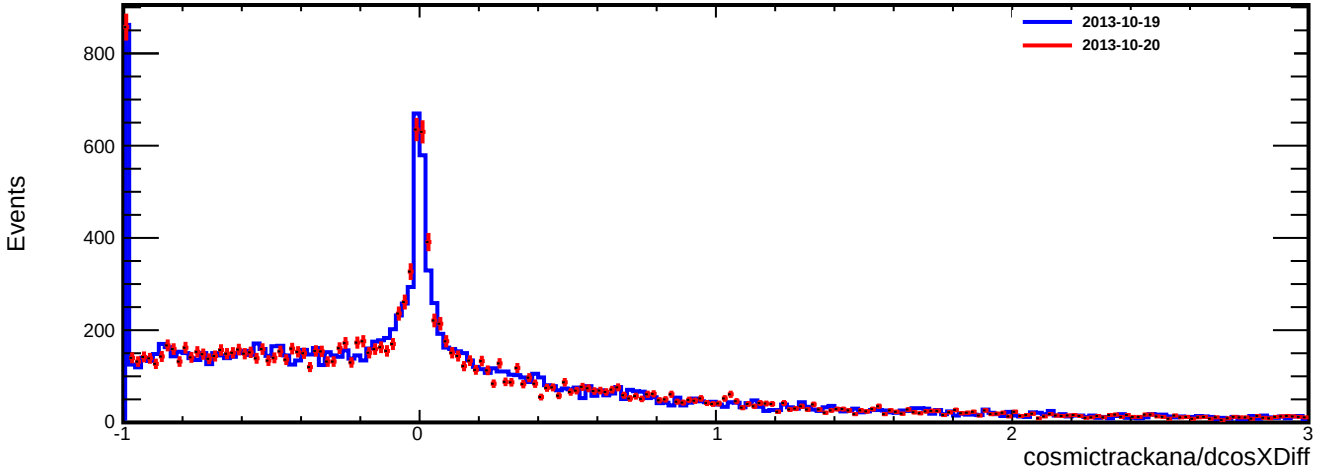

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
2
4
6
8
10
CosmicAna/fElectronEnergy

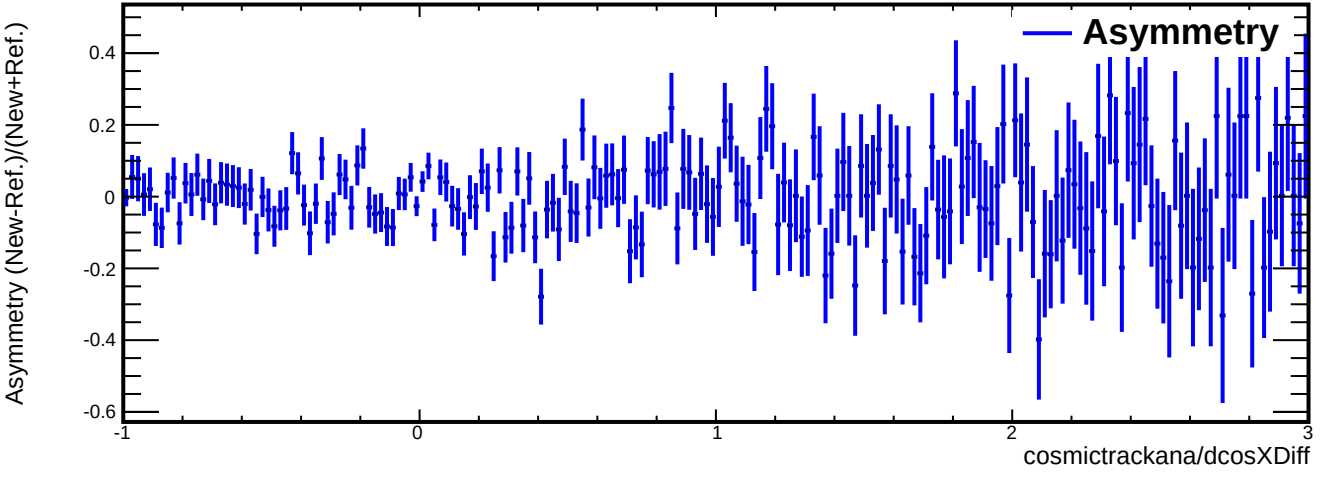

2013-10-19
2013-10-20
Events
3000
2000
1000
0
-1
-0.5
0
0.5
1
CosmicAna/fMuonCosQ

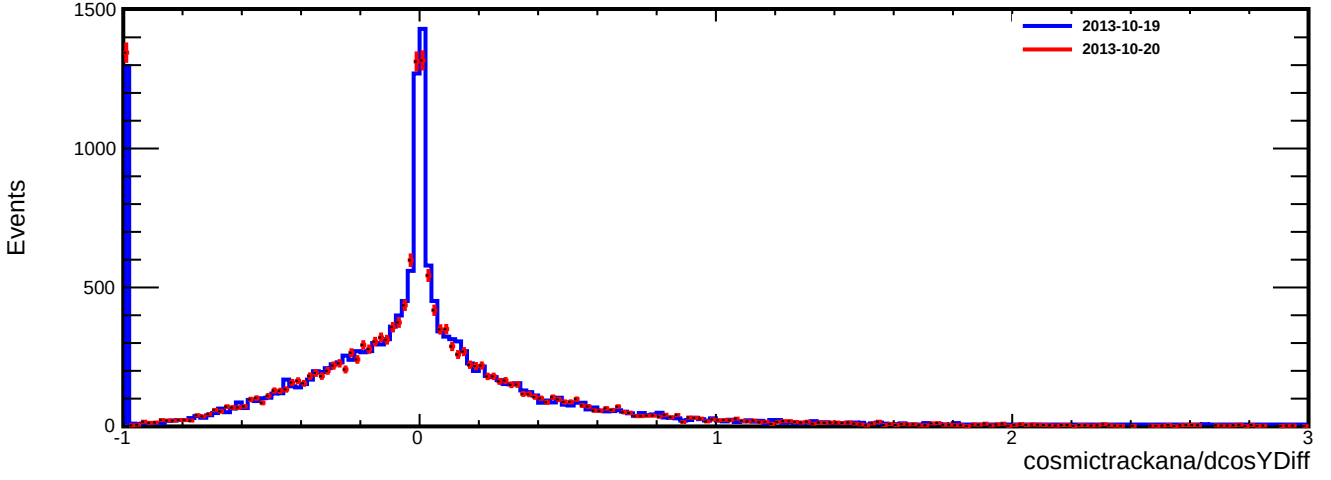

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
CosmicAna/fMuonCosQ

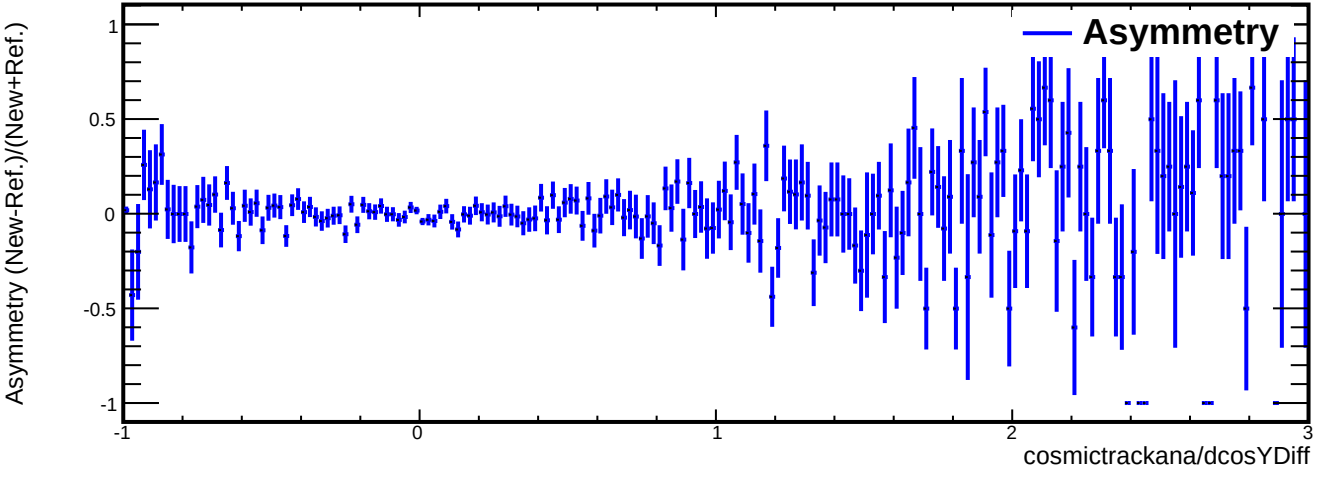

2013-10-19
2013-10-20
Events
4000
3000
2000
1000
0
0
20
40
60
80
100
CosmicAna/fMuonEnergy

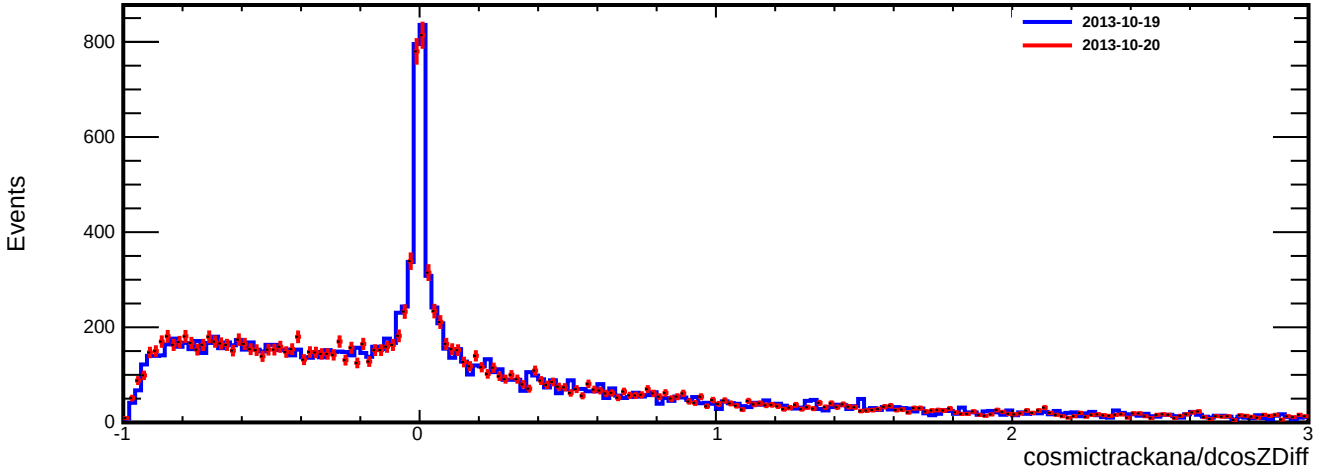

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
20
40
60
80
100
CosmicAna/fMuonEnergy

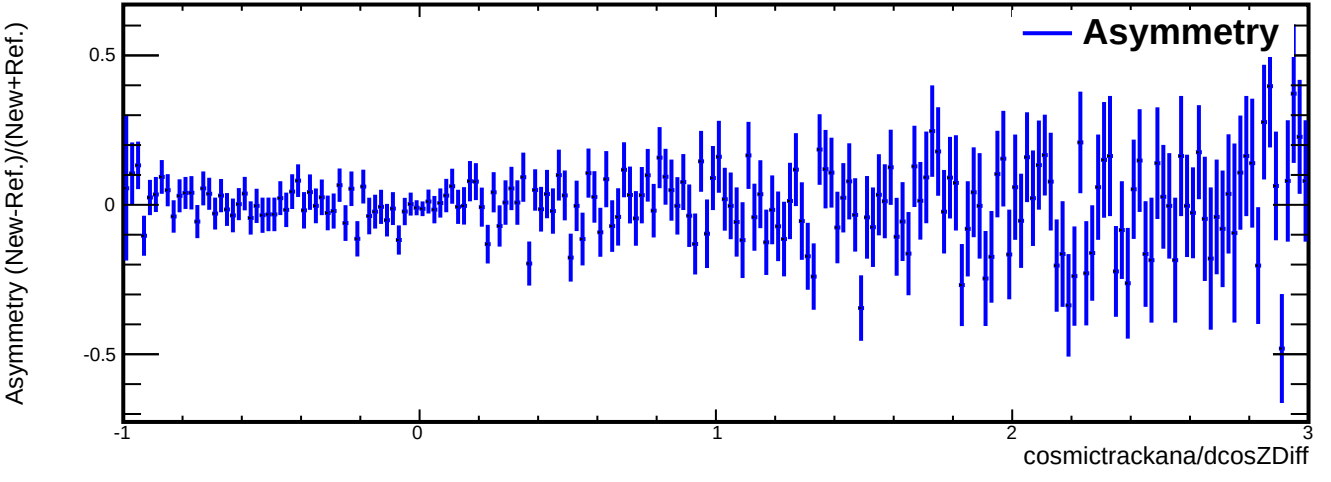

2013-10-19
2013-10-20
Events
800
600
400
200
0
-1
0
1
2
3
cosmictrackana/dcosXDiff

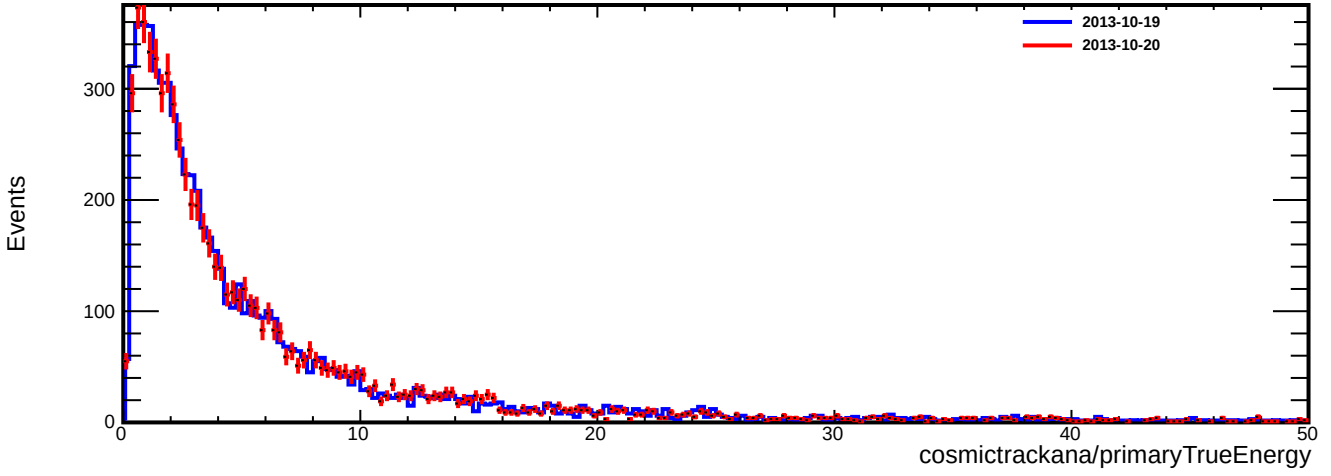

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.4
0.2
0
-0.2
-0.4
-0.6
-1
0
1
2
3
cosmictrackana/dcosXDiff

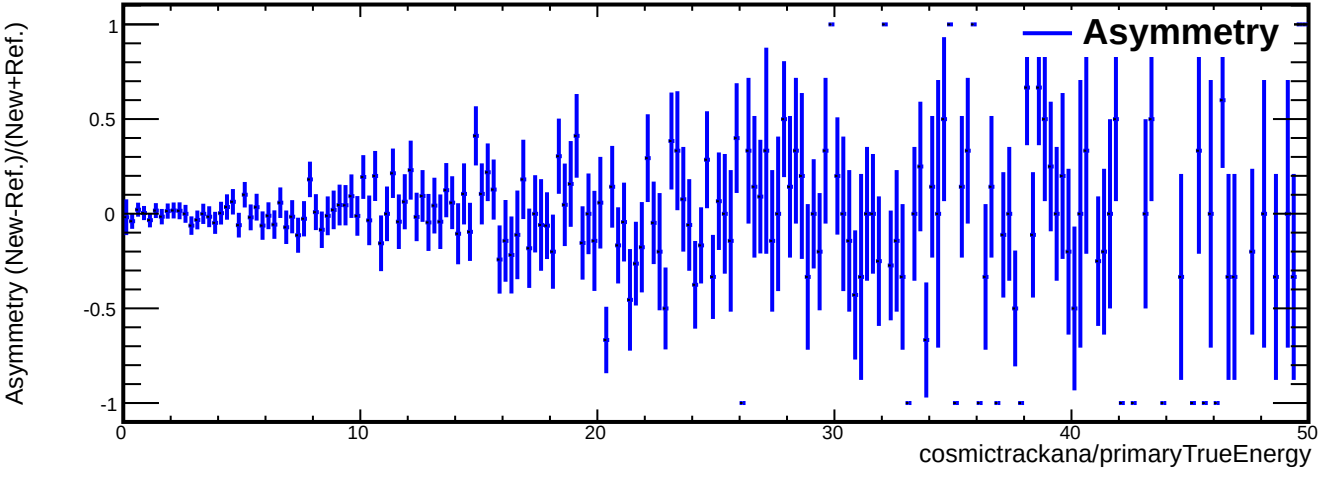

2013-10-19
2013-10-20
Events
1500
1000
500
0
-1
0
1
2
3
cosmictrackana/dcosYDiff

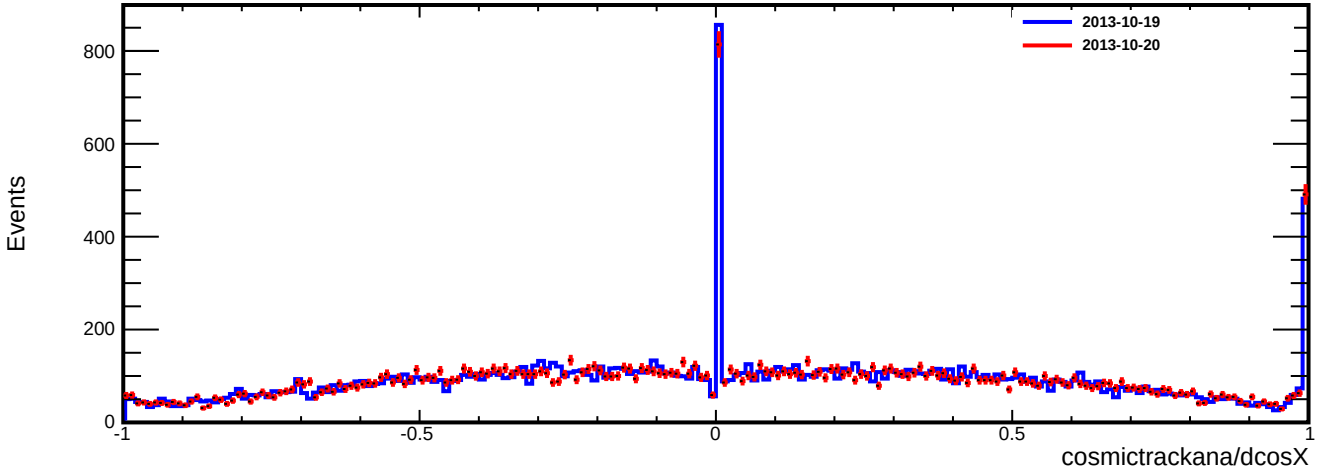

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1
0
1
2
3
cosmictrackana/dcosYDiff

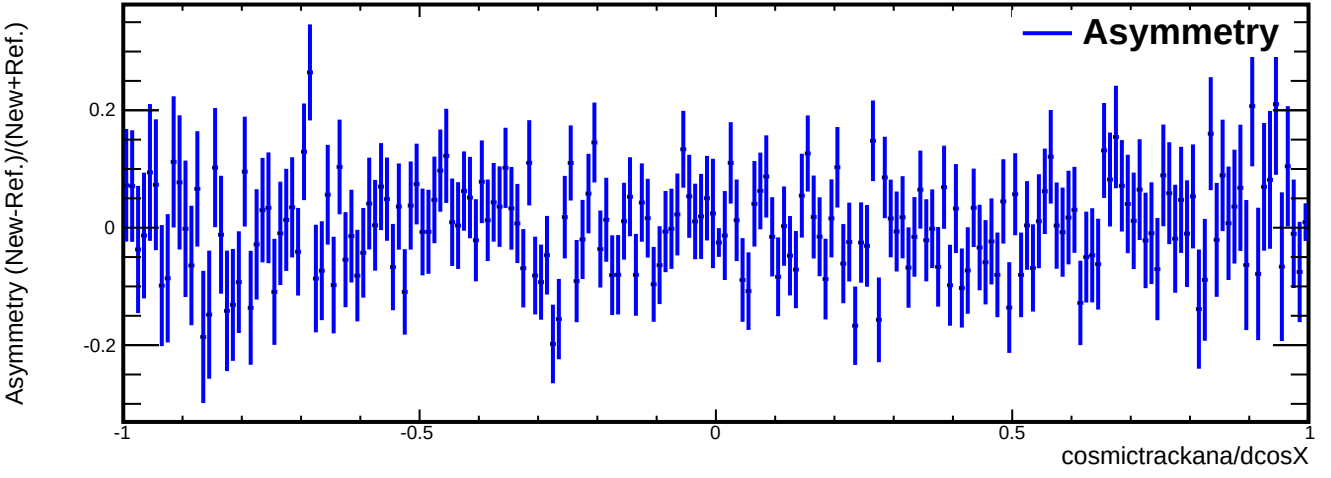

2013-10-19
2013-10-20
Events
800
600
400
200
0
-1
0
1
2
3
cosmictrackana/dcosZDiff

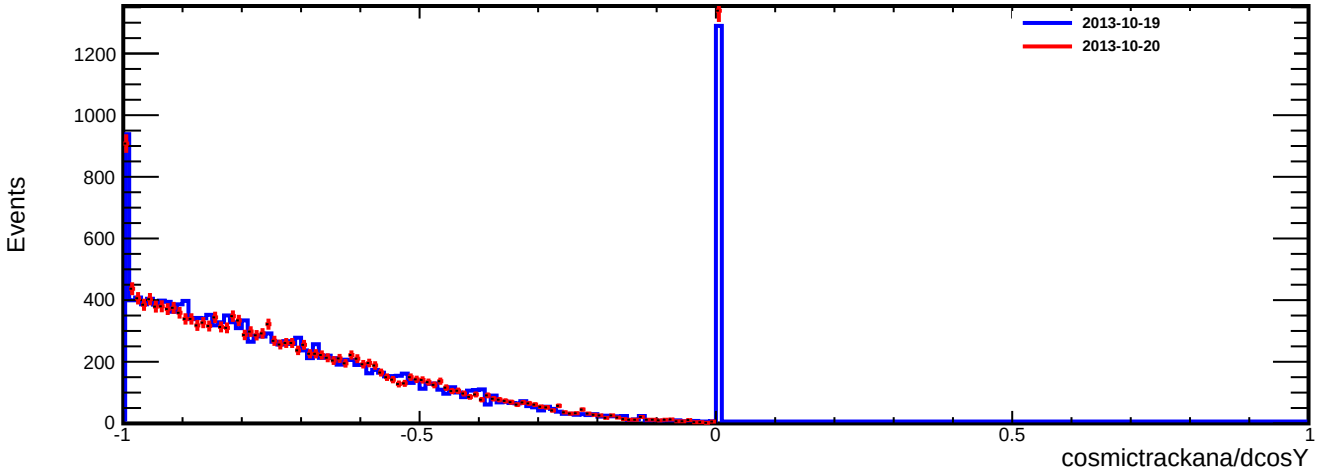

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.5
0
-0.5
-1
0
1
2
3
cosmictrackana/dcosZDiff

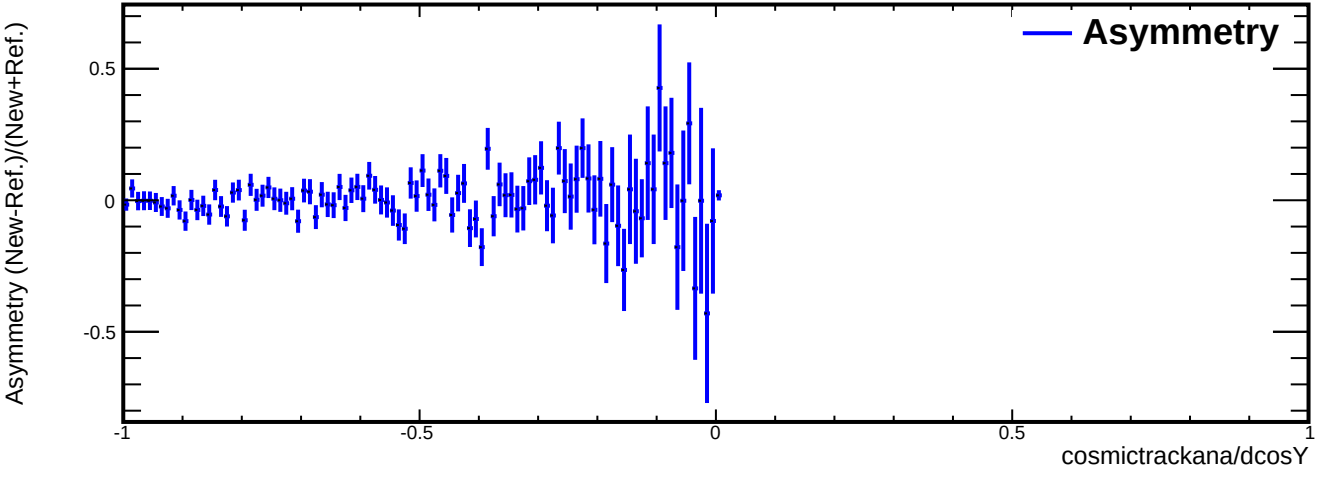

2013-10-19
2013-10-20
Events
300
200
100
0
0
10
20
30
40
50
cosmictrackana/primaryTrueEnergy

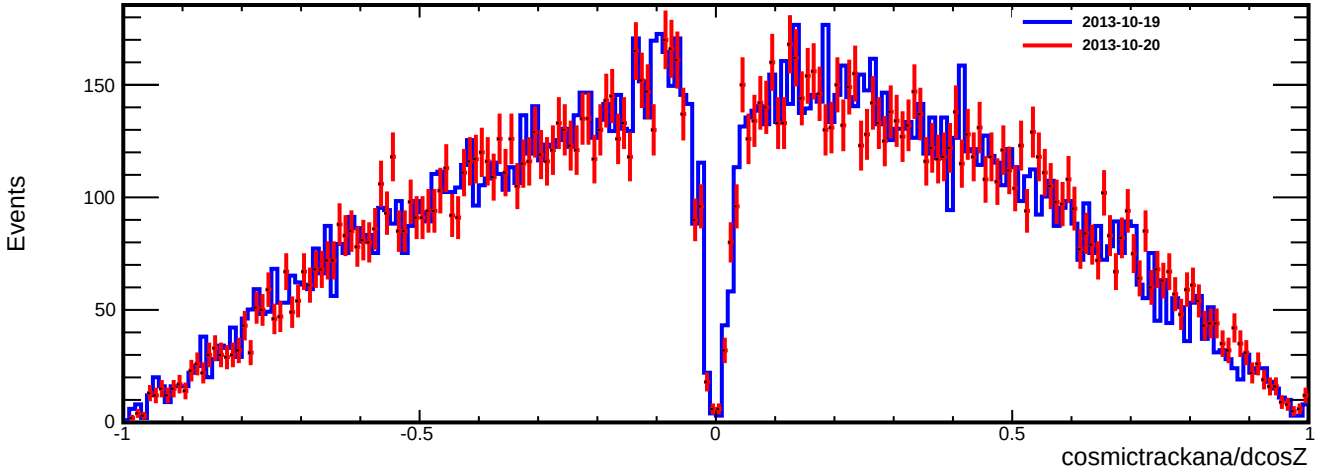

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
10
20
30
40
50
cosmictrackana/primaryTrueEnergy

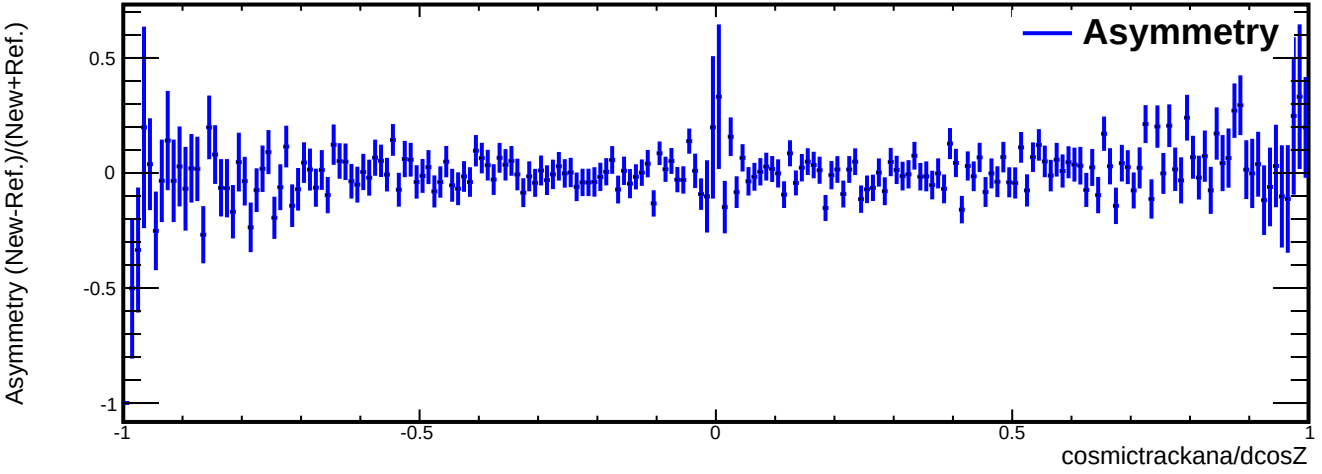

2013-10-19
2013-10-20
Events
800
600
400
200
0
-1
-0.5
0
0.5
1
cosmictrackana/dcosX

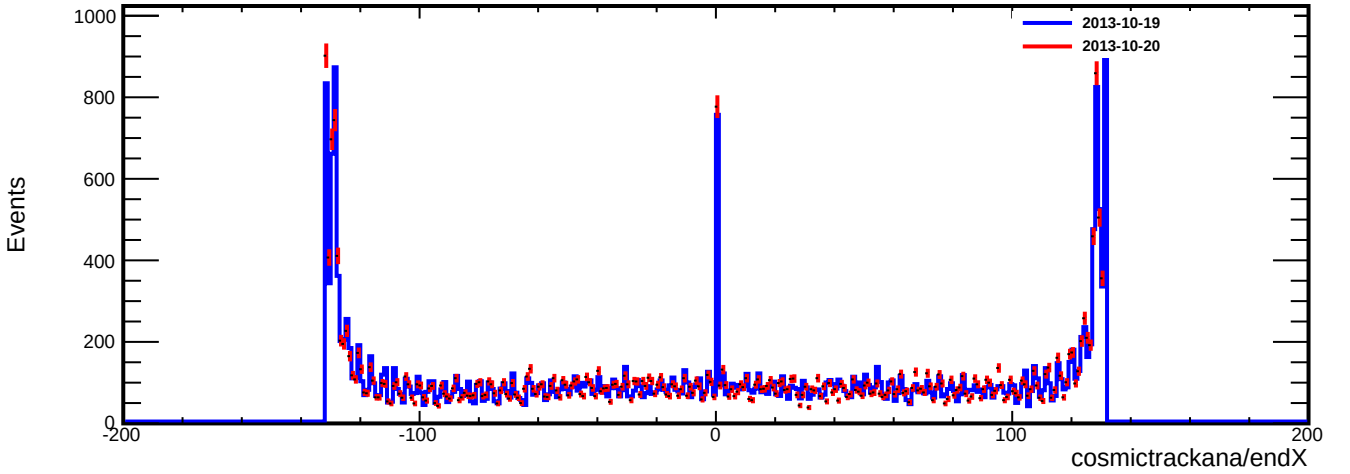

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.2
0
-0.2
-1
-0.5
0
0.5
1
cosmictrackana/dcosX

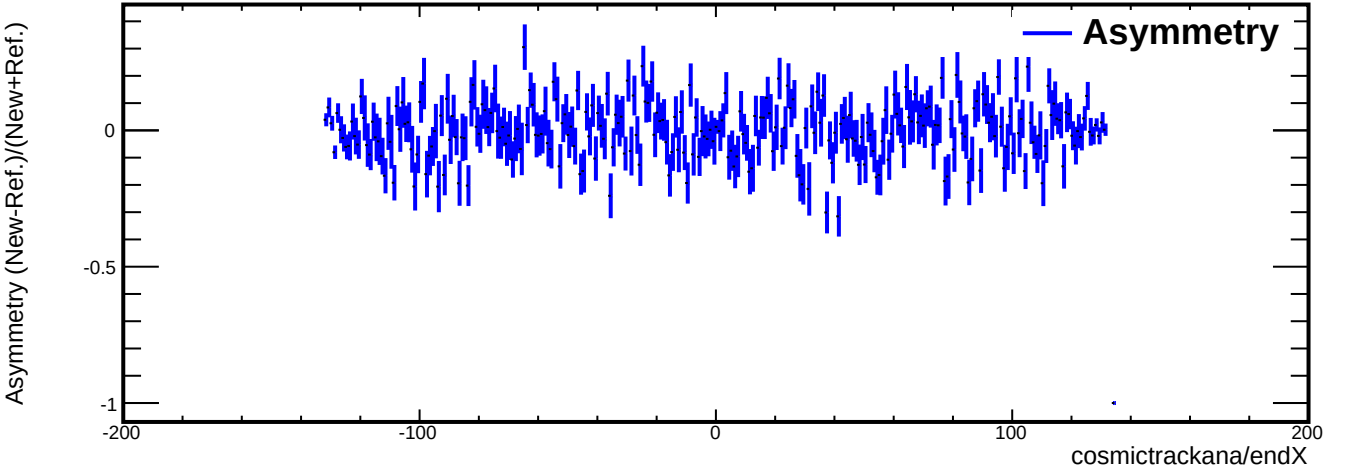

2013-10-19
2013-10-20
Events
1200
1000
800
600
400
200
0
-1
-0.5
0
0.5
1
cosmictrackana/dcosY

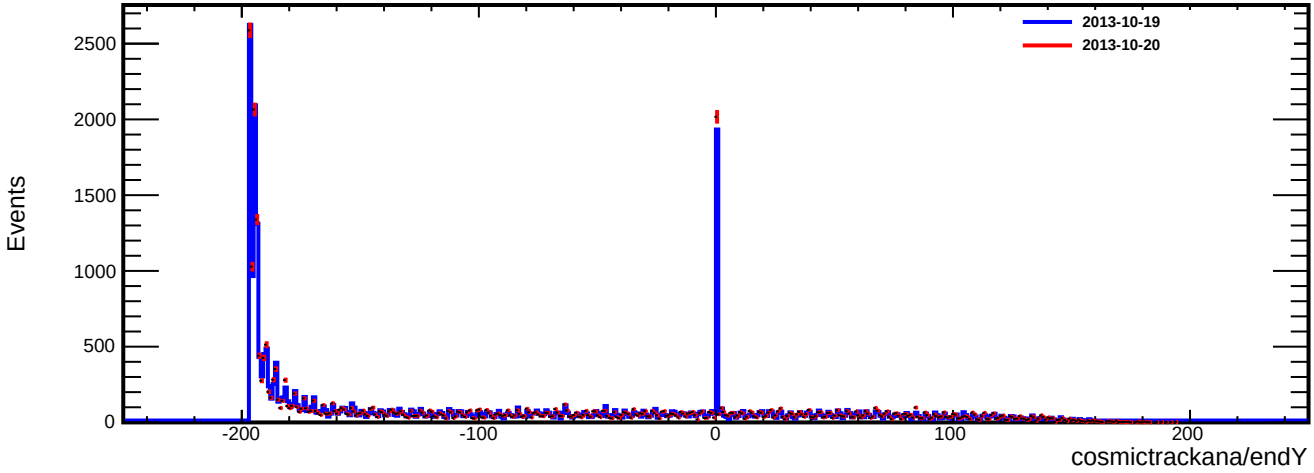

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.5
0
-0.5
-1
-0.5
0
0.5
1
cosmictrackana/dcosY

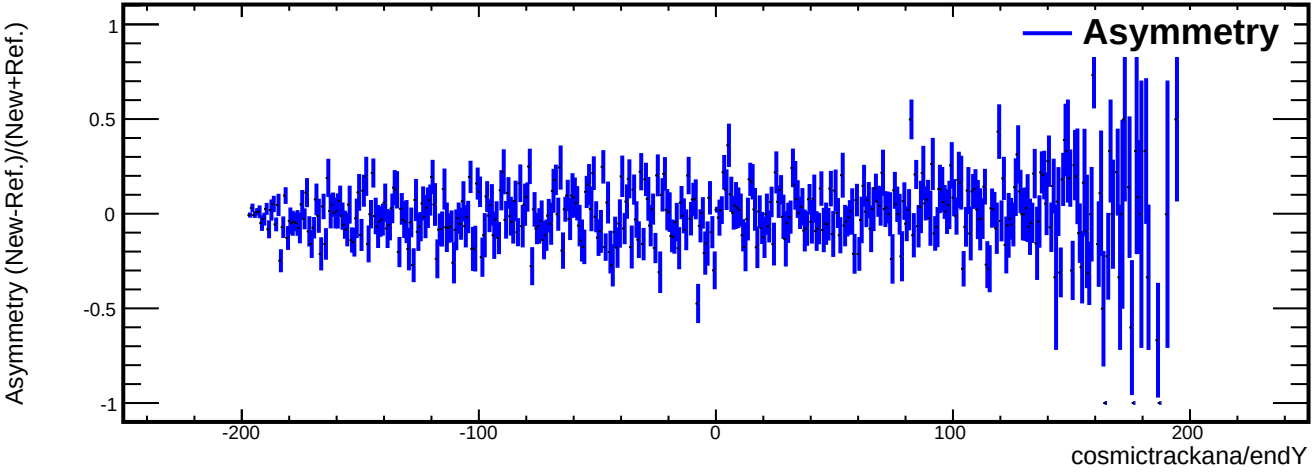

2013-10-19
2013-10-20
Events
150
100
50
0
-1
-0.5
0
0.5
1
cosmictrackana/dcosZ

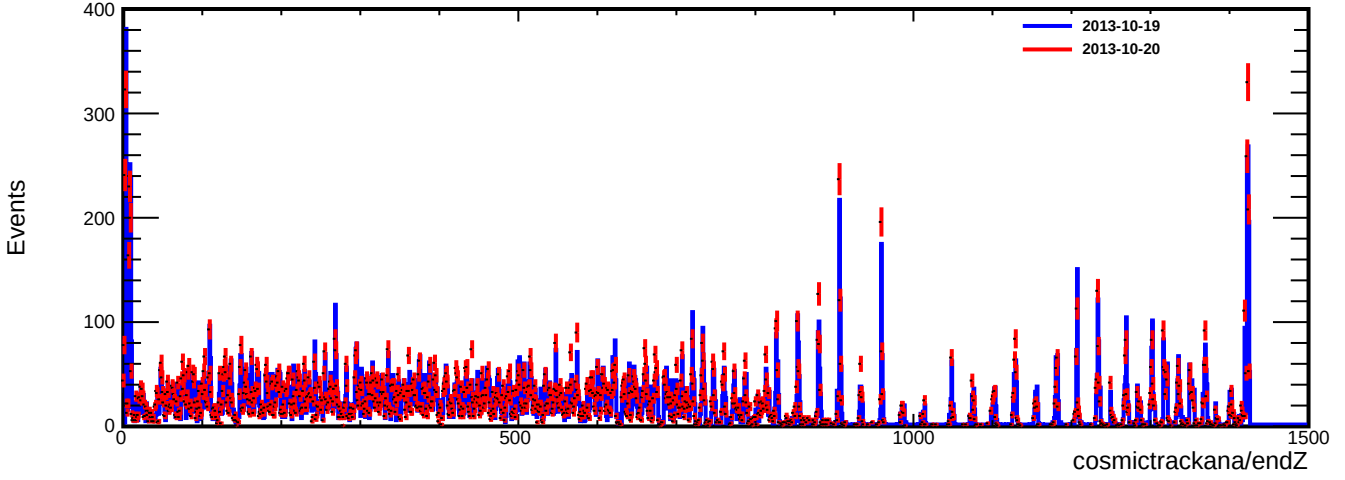

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
cosmictrackana/dcosZ

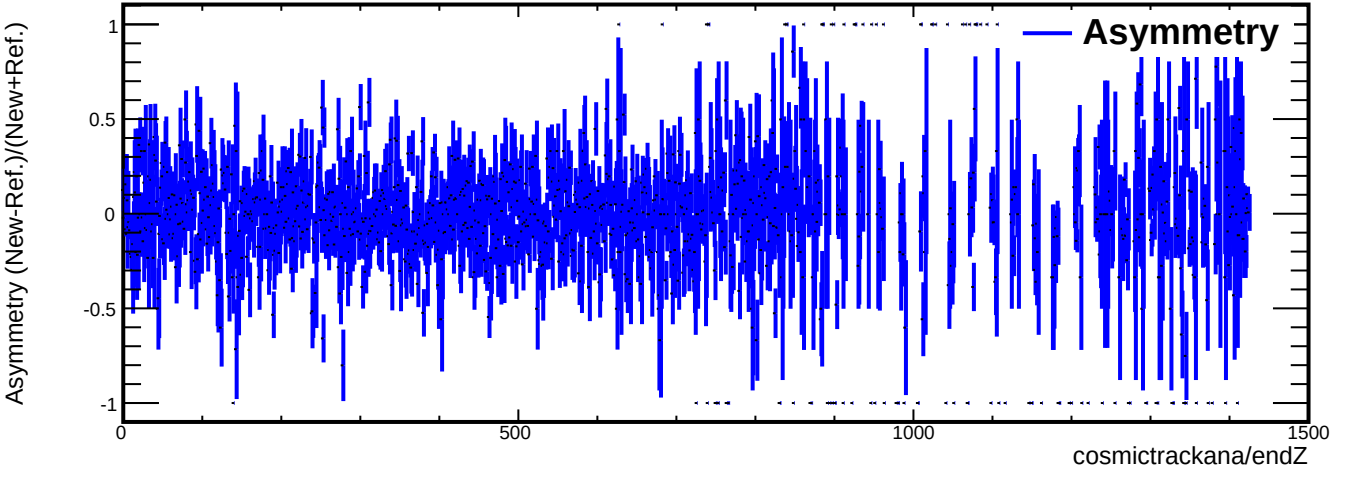

2013-10-19
2013-10-20
Events
1000
800
600
400
200
0
-200
-100
0
100
200
cosmictrackana/endX

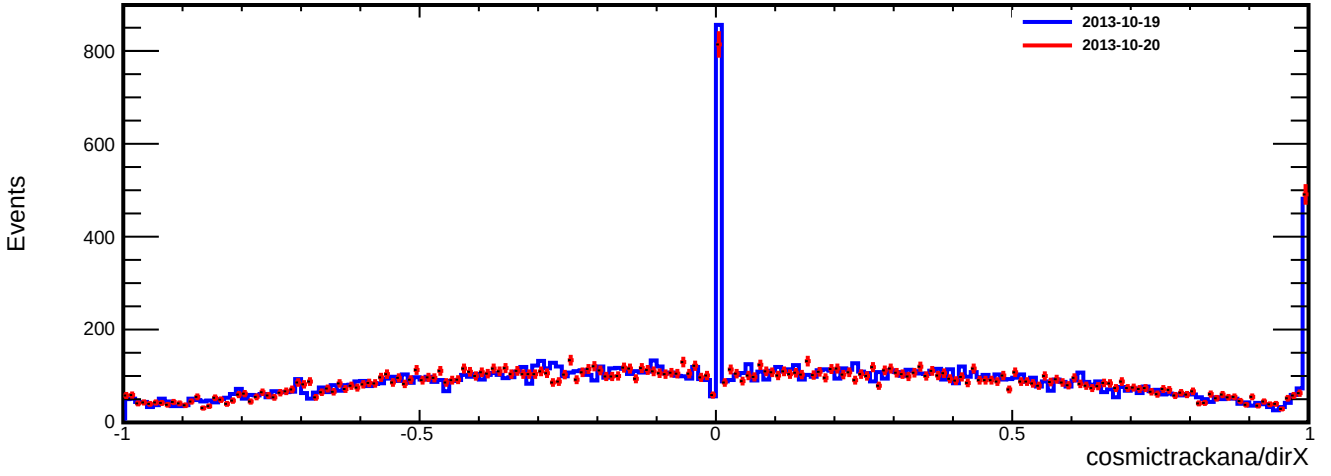

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0
-0.5
-1
-200
-100
0
100
200
cosmictrackana/endX

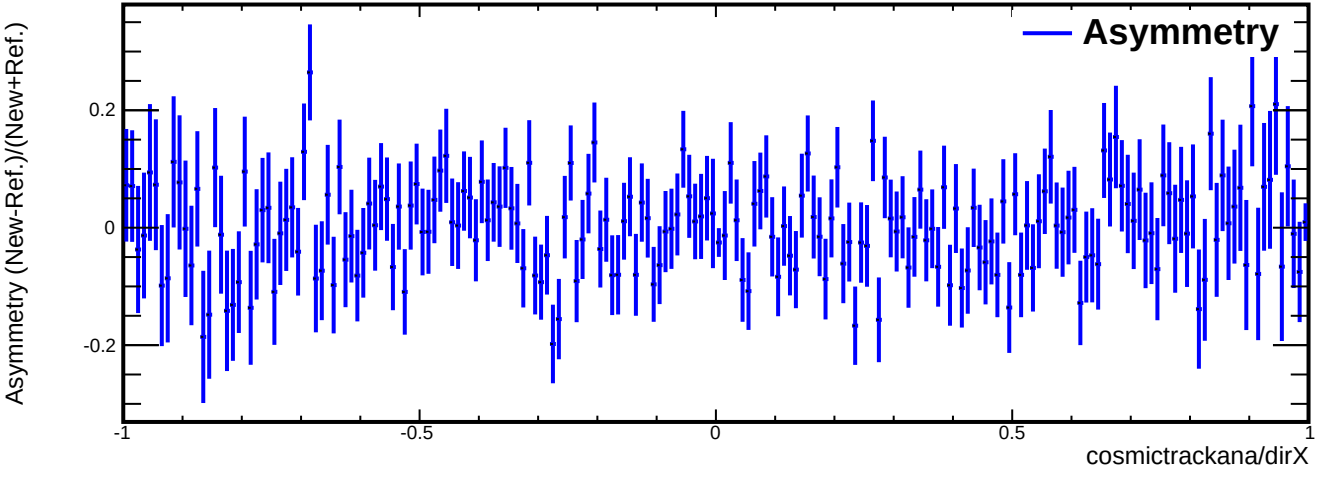

2013-10-19
2013-10-20
Events
2500
2000
1500
1000
500
0
-200
-100
0
100
200
cosmictrackana/endY

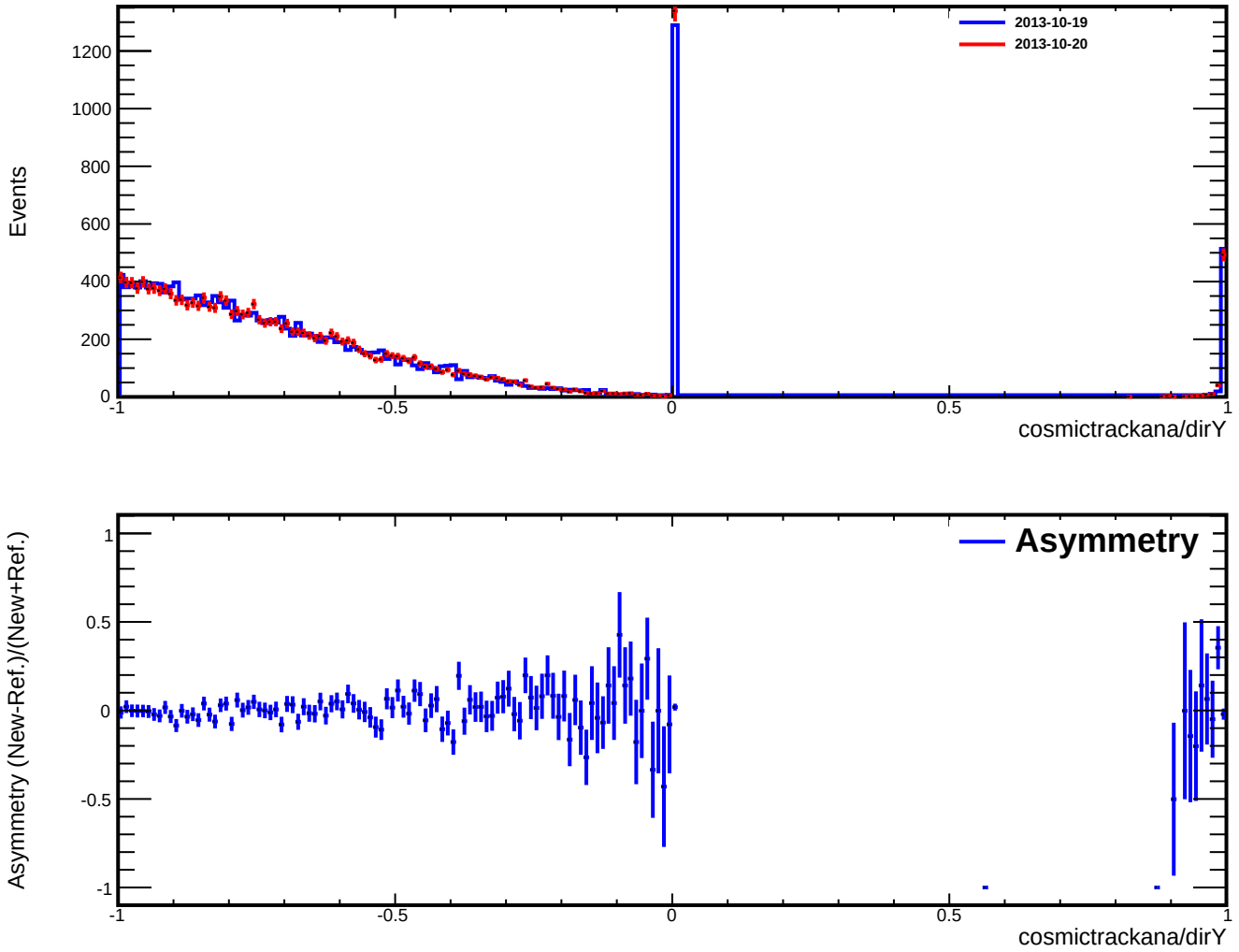

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-200
-100
0
100
200
cosmictrackana/endY

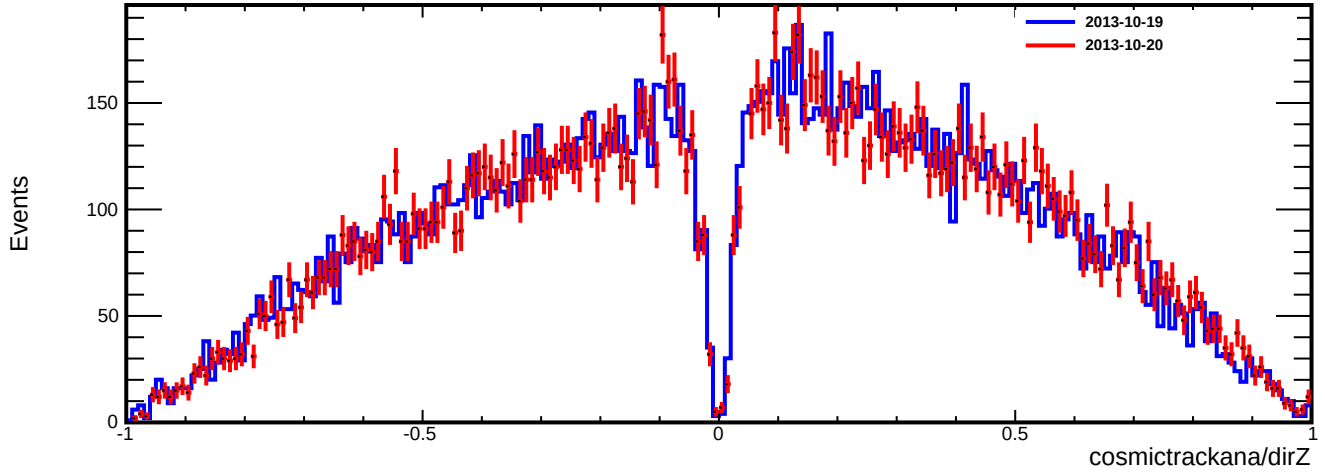

2013-10-19
2013-10-20
Events
400
300
200
100
0
0
500
1000
1500
cosmictrackana/endZ

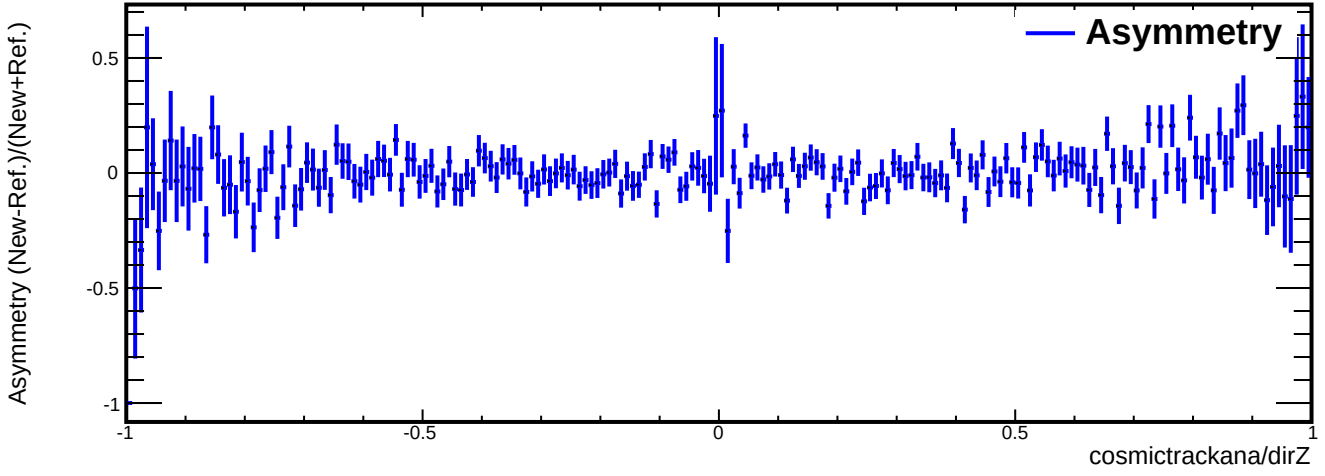

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
500
1000
1500
cosmictrackana/endZ

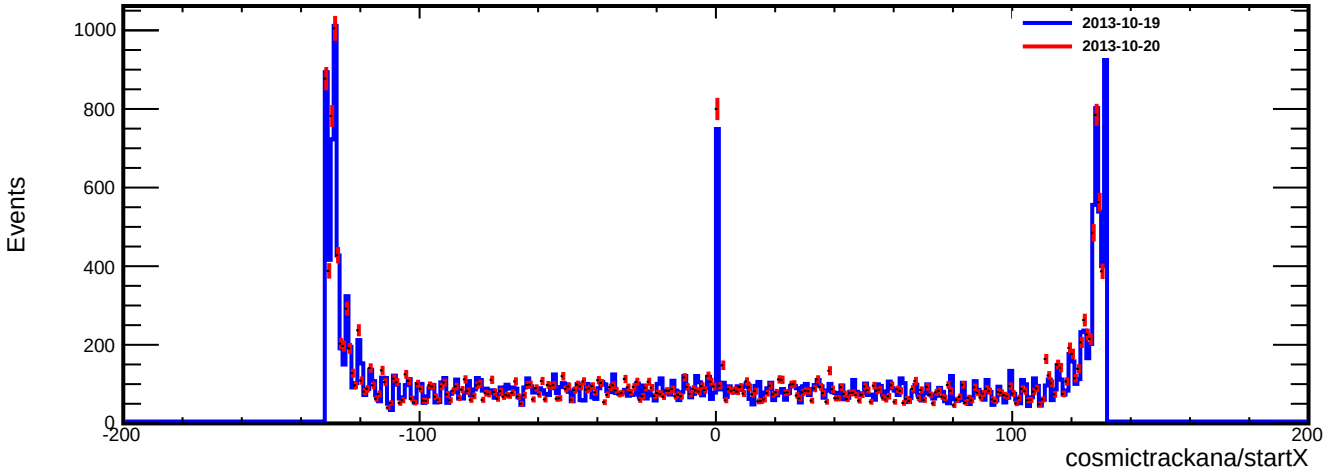

2013-10-19
2013-10-20
Events
800
600
400
200
0
-1
-0.5
0
0.5
1
cosmictrackana/dirX

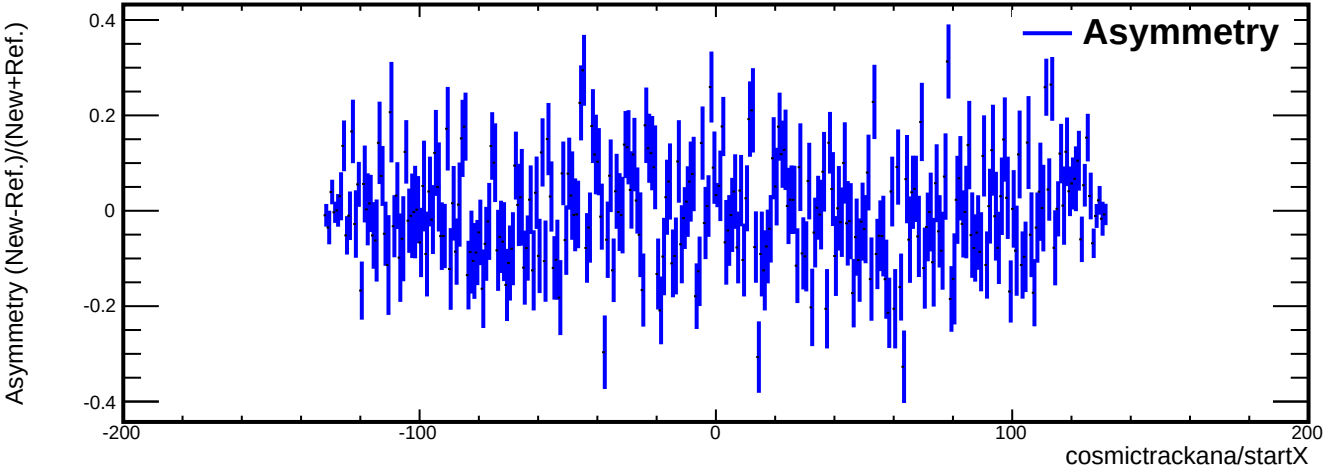

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.2
0
-0.2
-1
-0.5
0
0.5
1
cosmictrackana/dirX

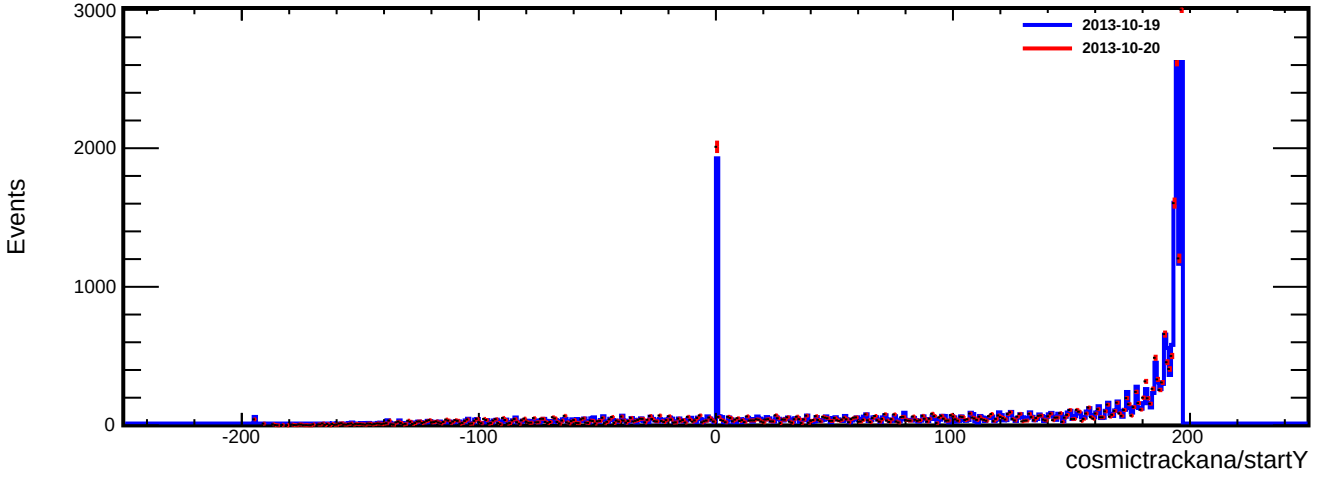

2013-10-19
2013-10-20
Events
1200
1000
800
600
400
200
0
-1
-0.5
0
0.5
1
cosmictrackana/dirY
Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
cosmictrackana/dirY

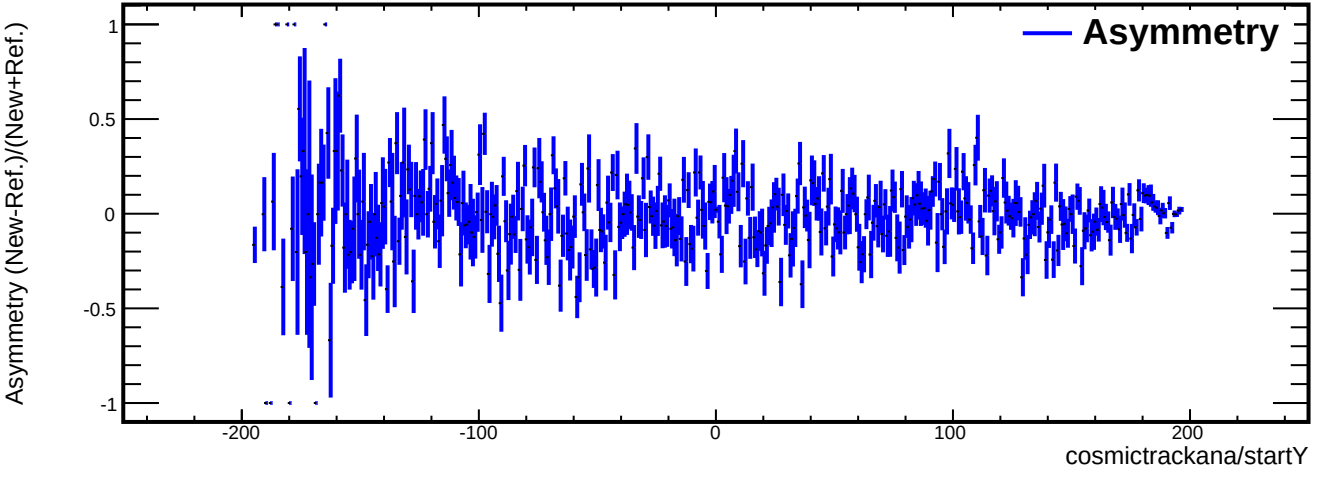

2013-10-19
2013-10-20
Events
150
100
50
0
-1
-0.5
0
0.5
1
cosmictrackana/dirZ

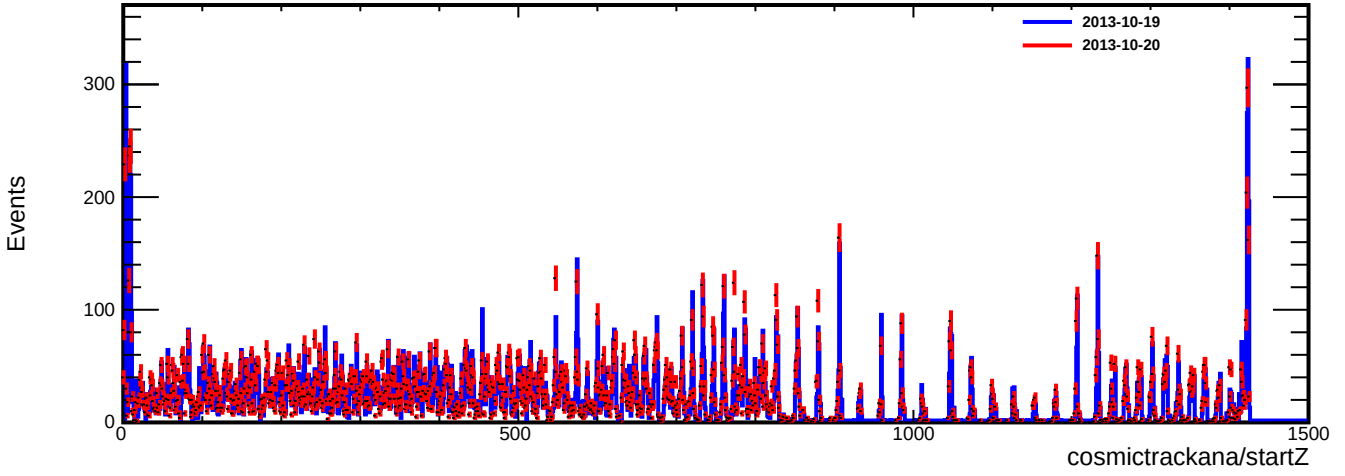

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.5
0
-0.5
-1
-1
-0.5
0
0.5
1
cosmictrackana/dirZ

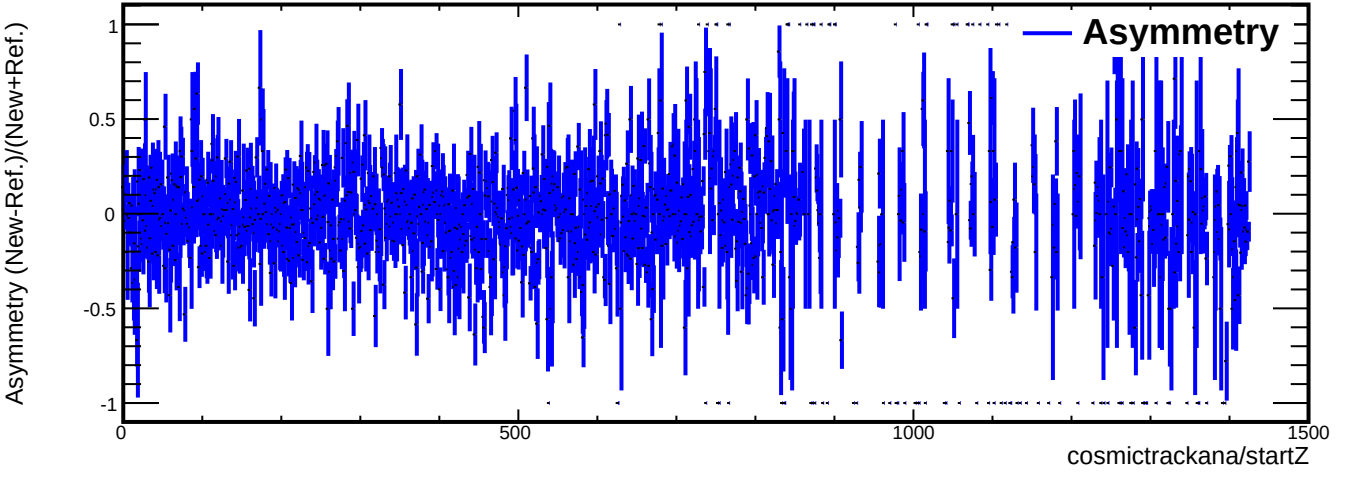

2013-10-19
2013-10-20
Events
1000
800
600
400
200
0
-200
-100
0
100
200
cosmictrackana/startX

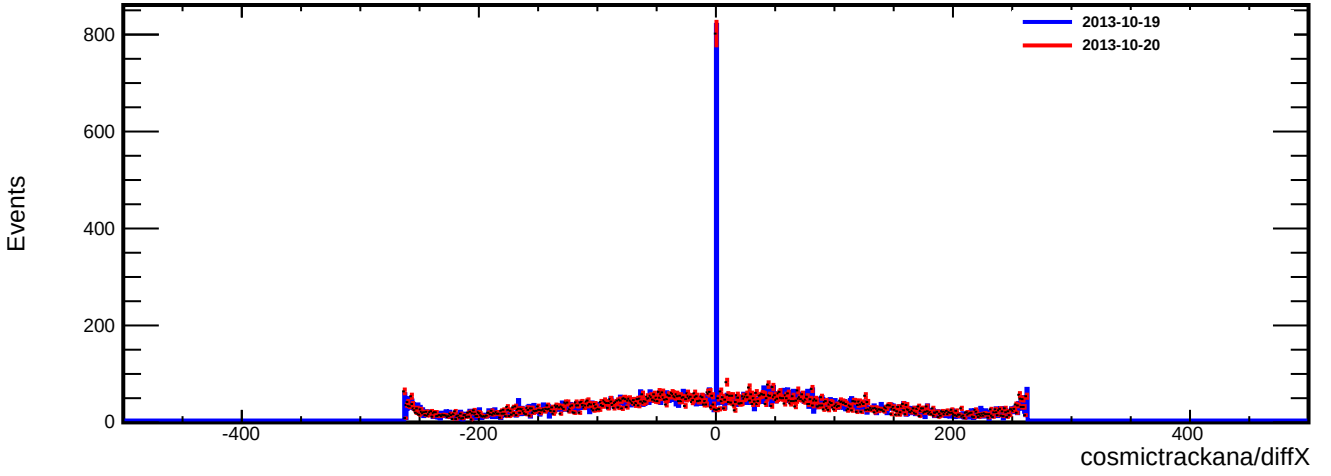

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.4
0.2
0
-0.2
-0.4
-200
-100
0
100
200
cosmictrackana/startX

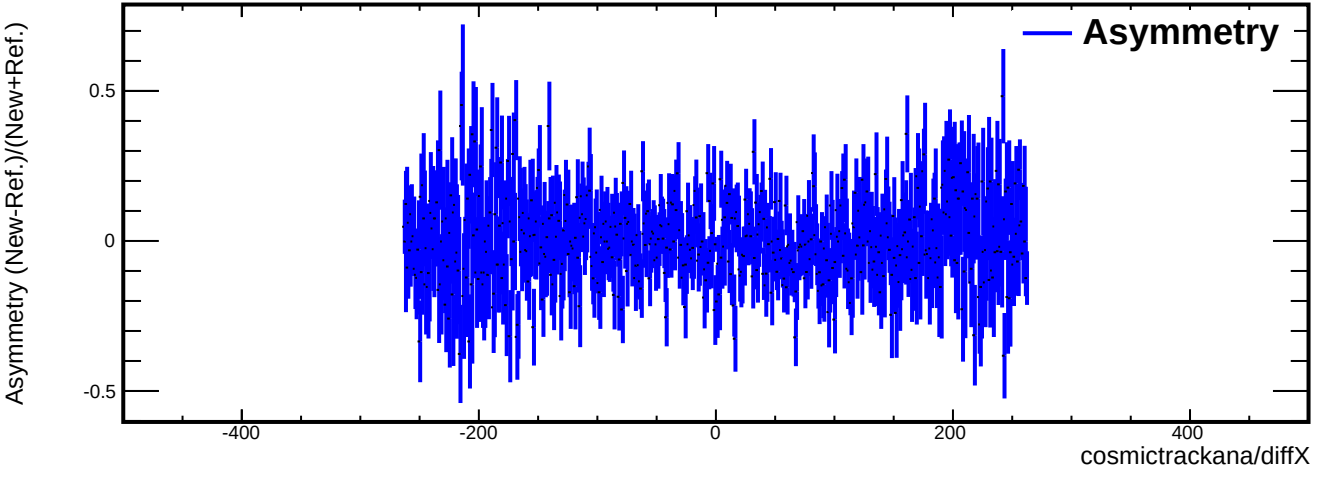

2013-10-19
2013-10-20
Events
3000
2000
1000
0
-200
-100
0
100
200
cosmictrackana/startY

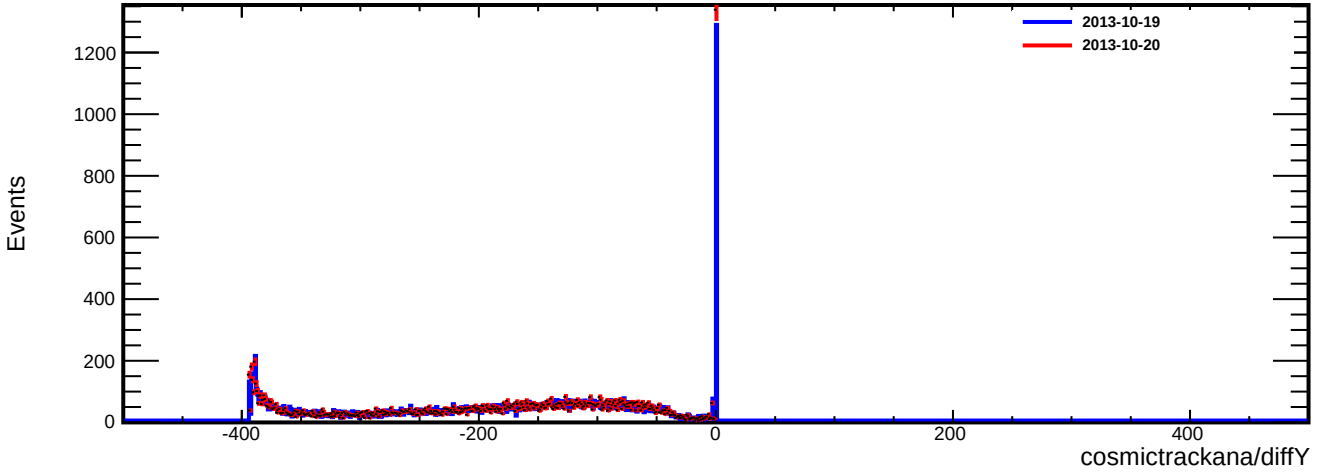

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-200
-100
0
100
200
cosmictrackana/startY

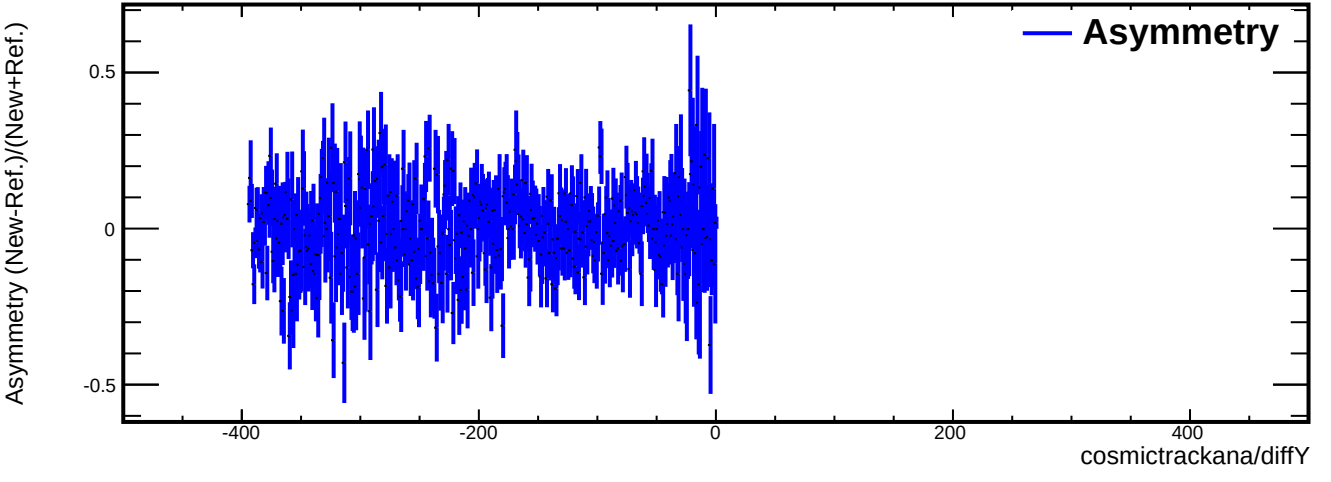

2013-10-19
2013-10-20
Events
300
200
100
0
0
500
1000
1500
cosmictrackana/startZ

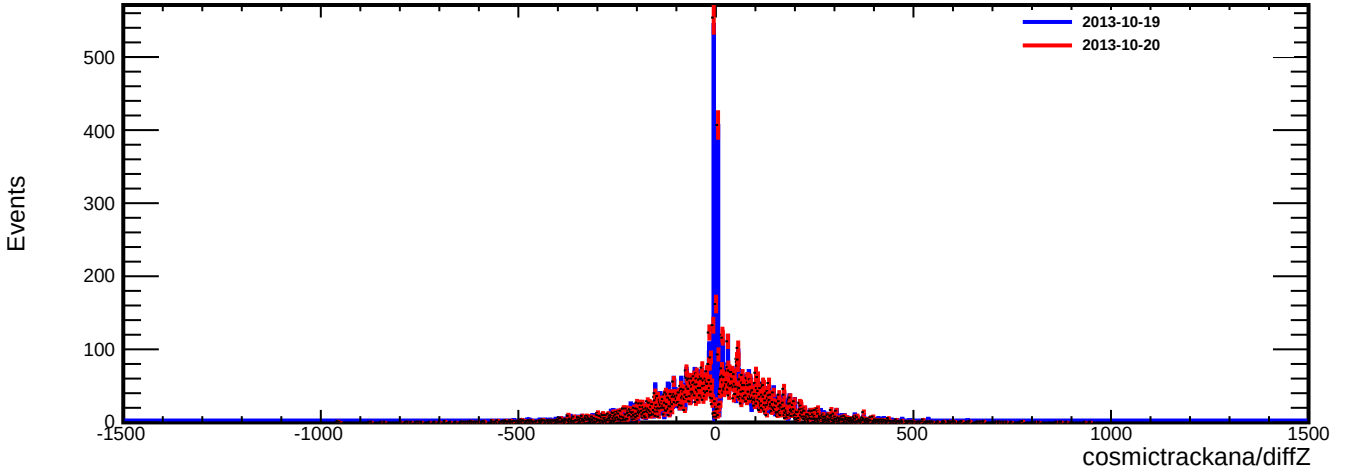

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
500
1000
1500
cosmictrackana/startZ

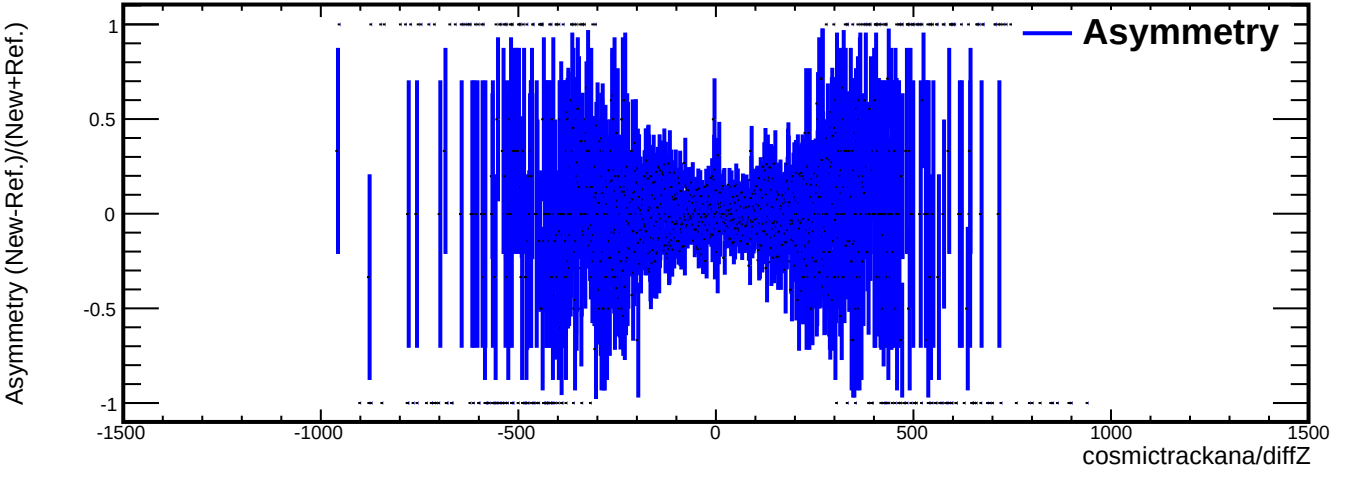

2013-10-19
2013-10-20
Events
800
600
400
200
0
-400
-200
0
200
400
cosmictrackana/diffX

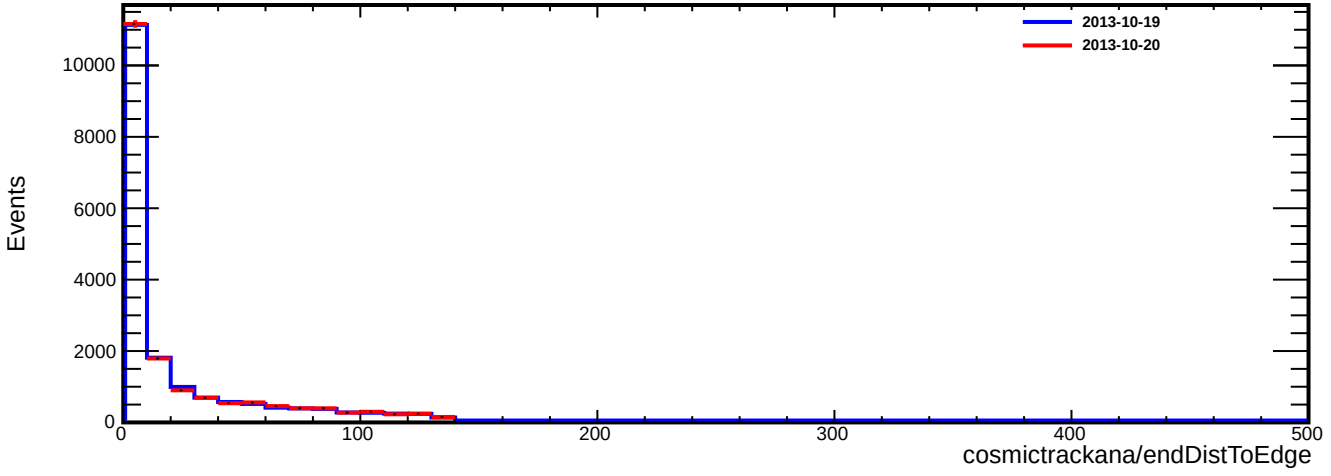

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.5
0
-0.5
-400
-200
0
200
400
cosmictrackana/diffX

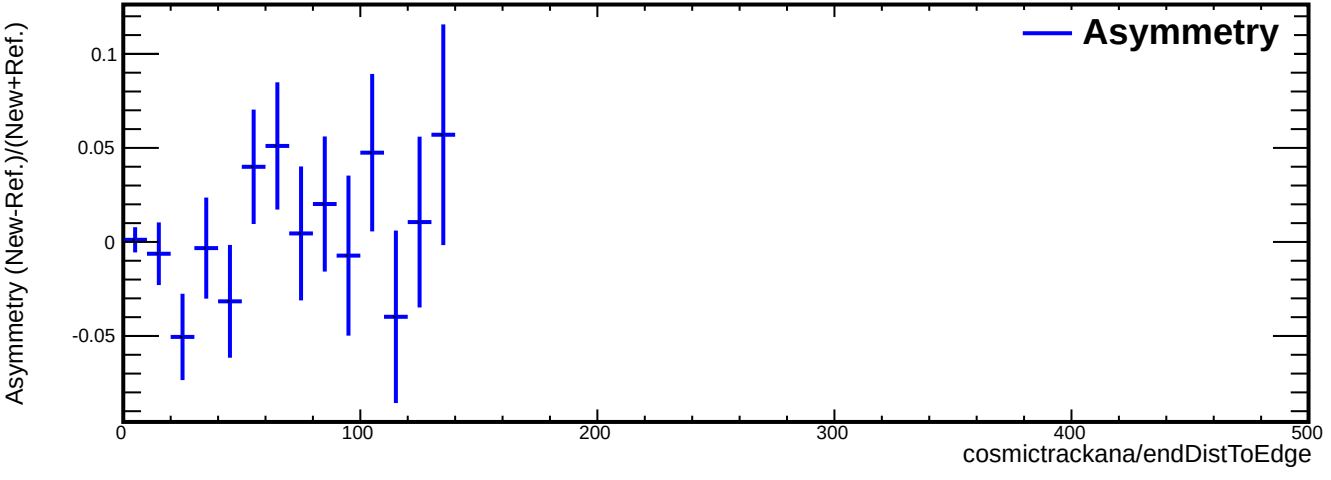

2013-10-19
2013-10-20
Events
1200
1000
800
600
400
200
0
-400
-200
0
200
400
cosmictrackana/diffY

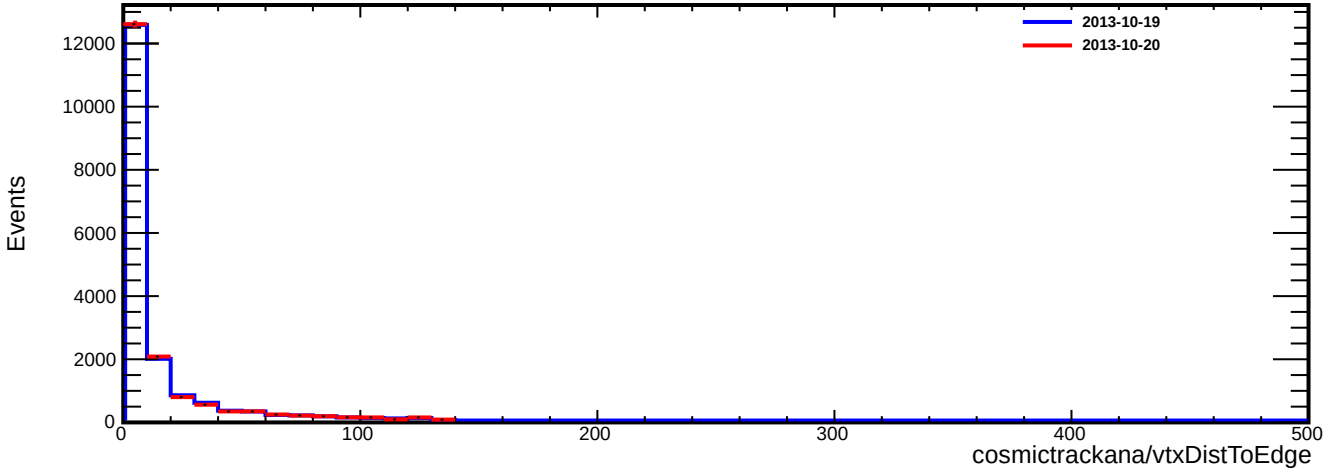

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.5
0
-0.5
-400
-200
0
200
400
cosmictrackana/diffY

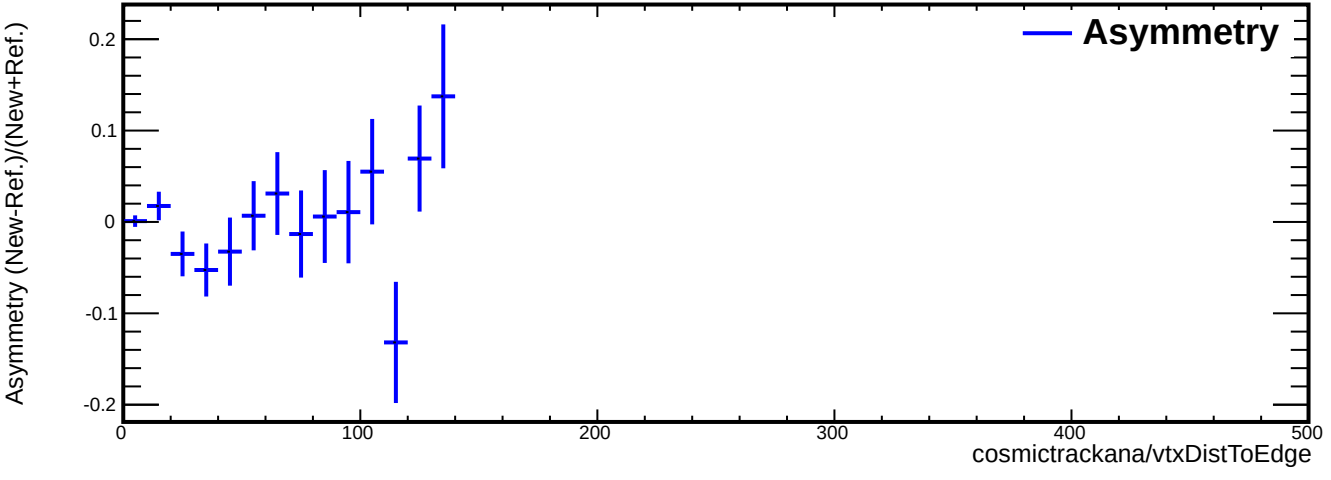

2013-10-19
2013-10-20
Events
500
400
300
200
100
0
-1500
-1000
-500
0
500
1000
1500
cosmictrackana/diffZ

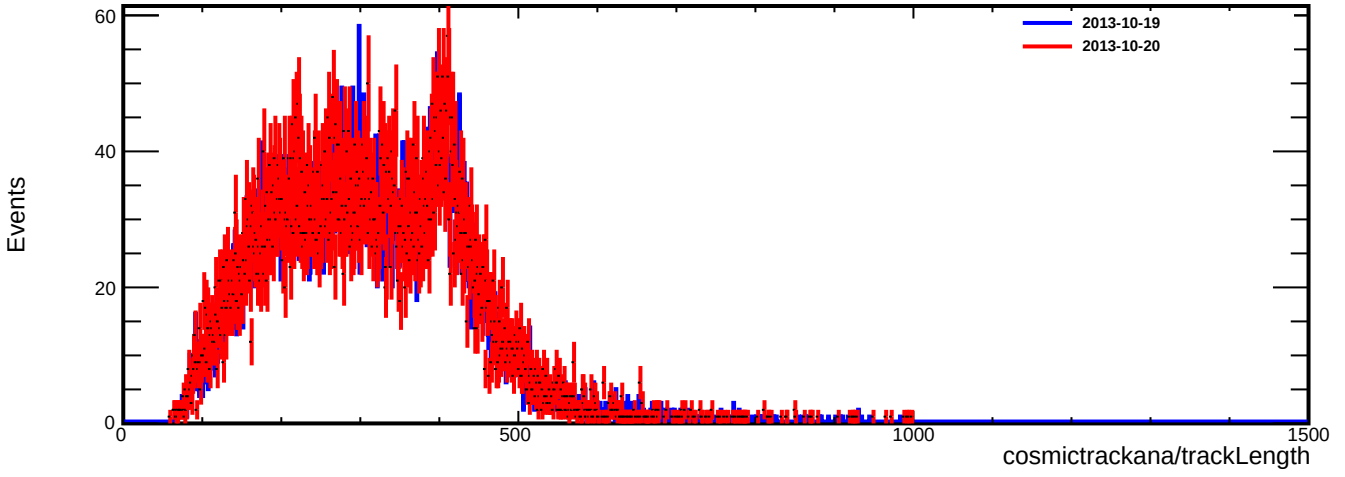

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-1500
-1000
-500
0
500
1000
1500
cosmictrackana/diffZ

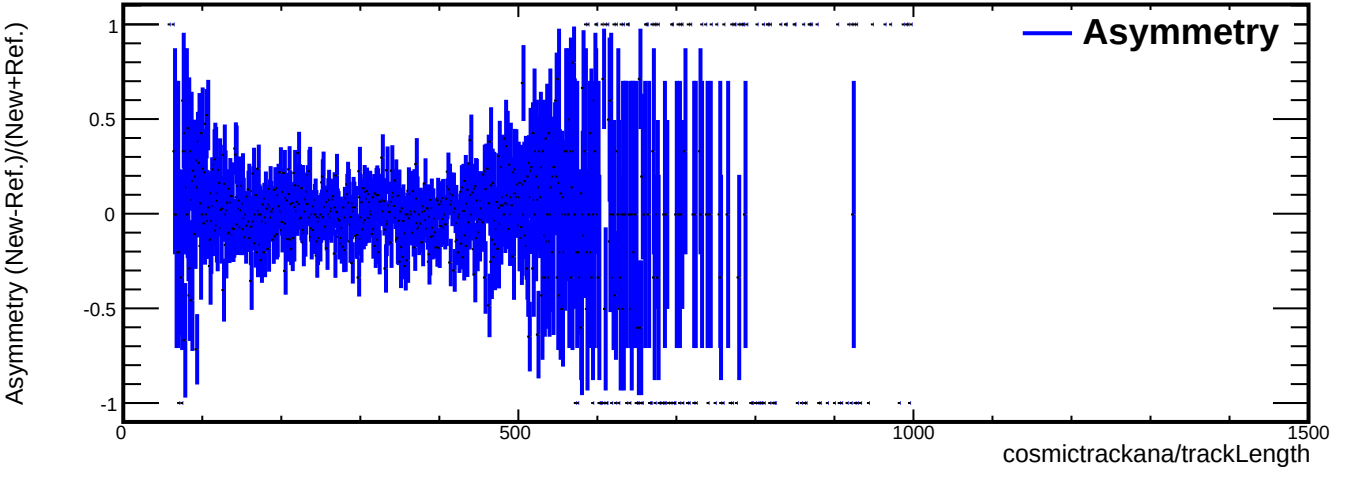

2013-10-19
2013-10-20
Events
10000
8000
6000
4000
2000
0
0
100
200
300
400
500
cosmictrackana/endDistToEdge

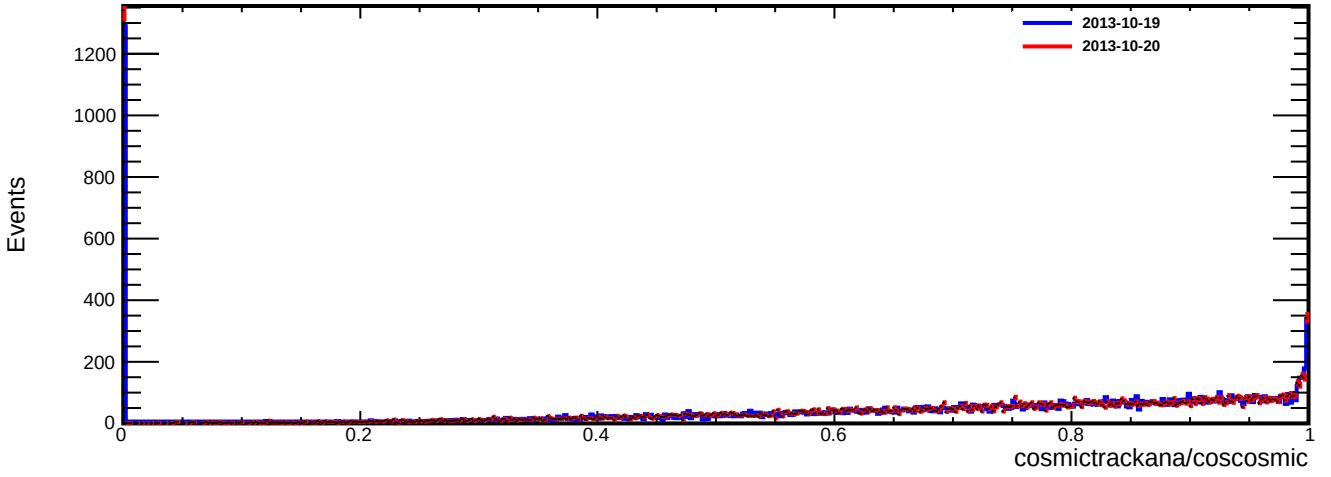

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.1
0.05
0
-0.05
0
100
200
300
400
500
cosmictrackana/endDistToEdge

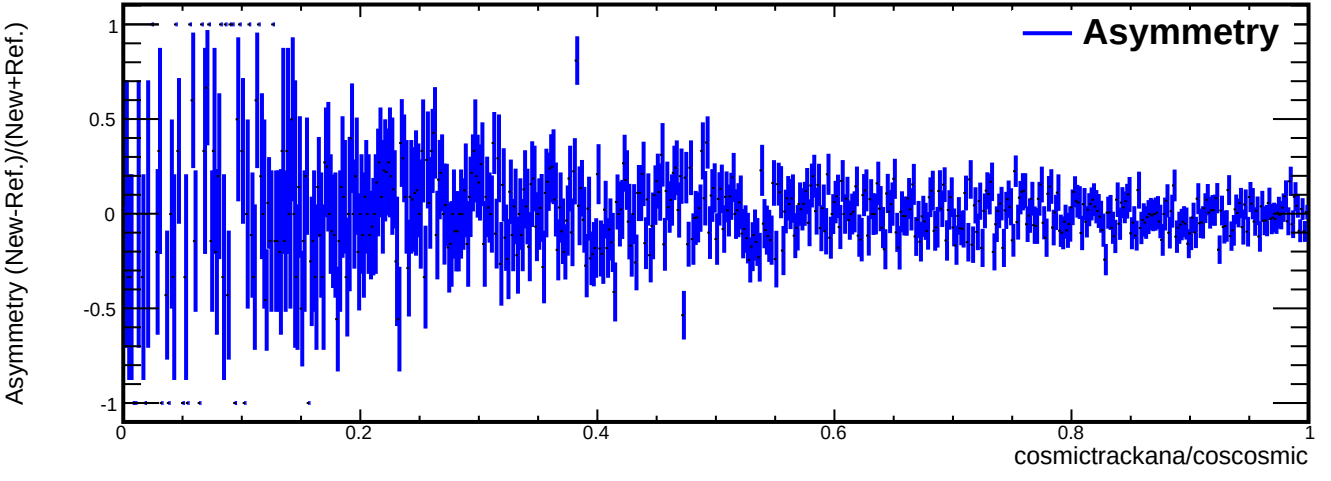

2013-10-19
2013-10-20
Events
12000
10000
8000
6000
4000
2000
0
0
100
200
300
400
500
cosmictrackana/vtxDistToEdge

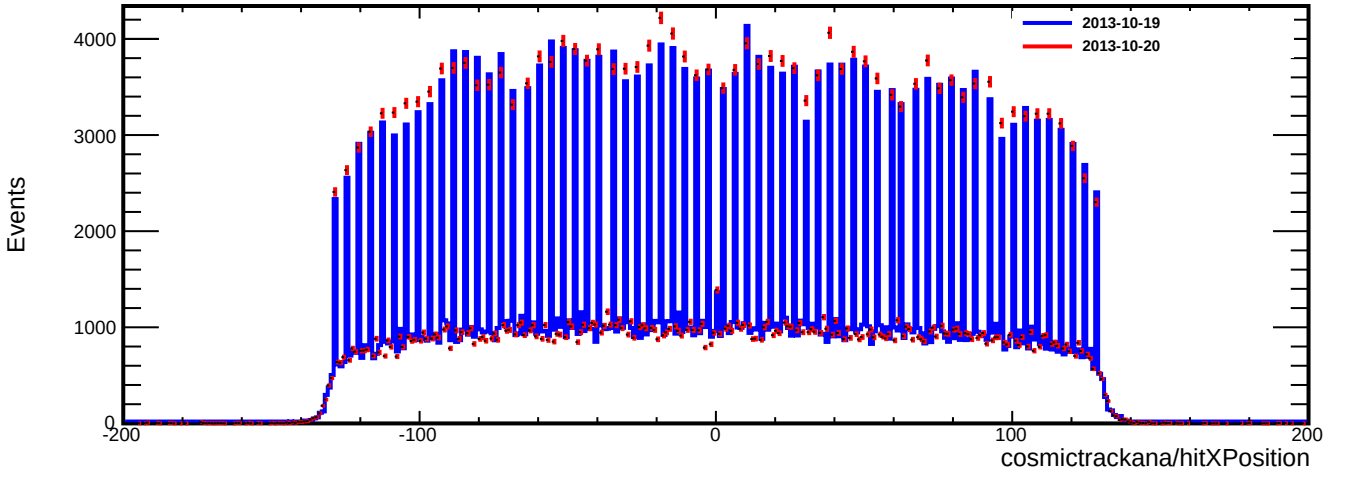

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.2
0.1
0
-0.1
-0.2
0
100
200
300
400
500
cosmictrackana/vtxDistToEdge

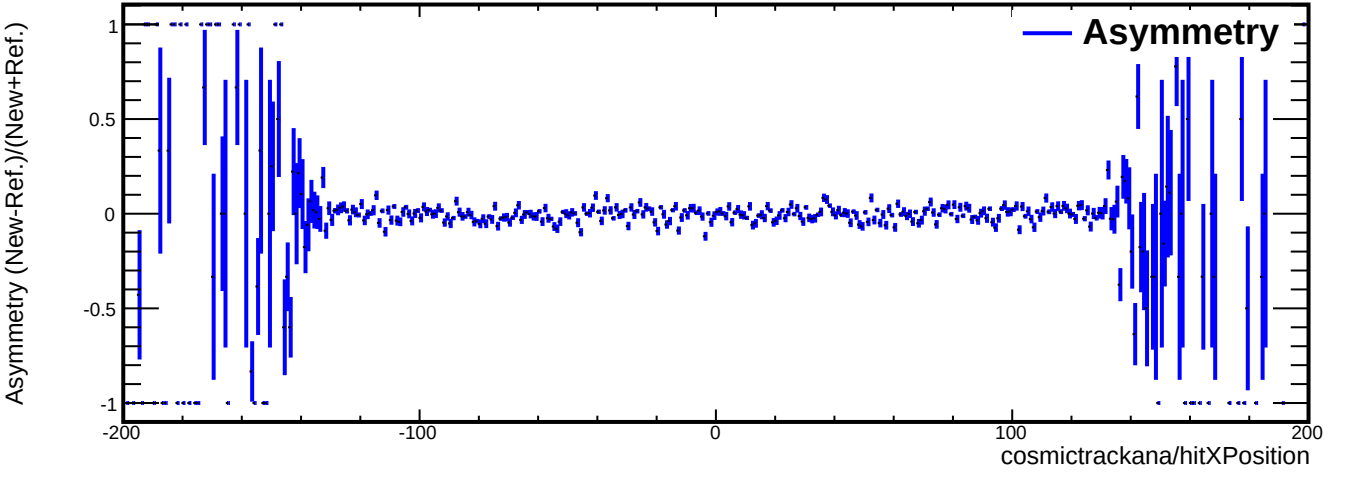

Events
60
40
20
0
0
500
1000
1500
cosmictrackana/trackLength
2013-10-19
2013-10-20

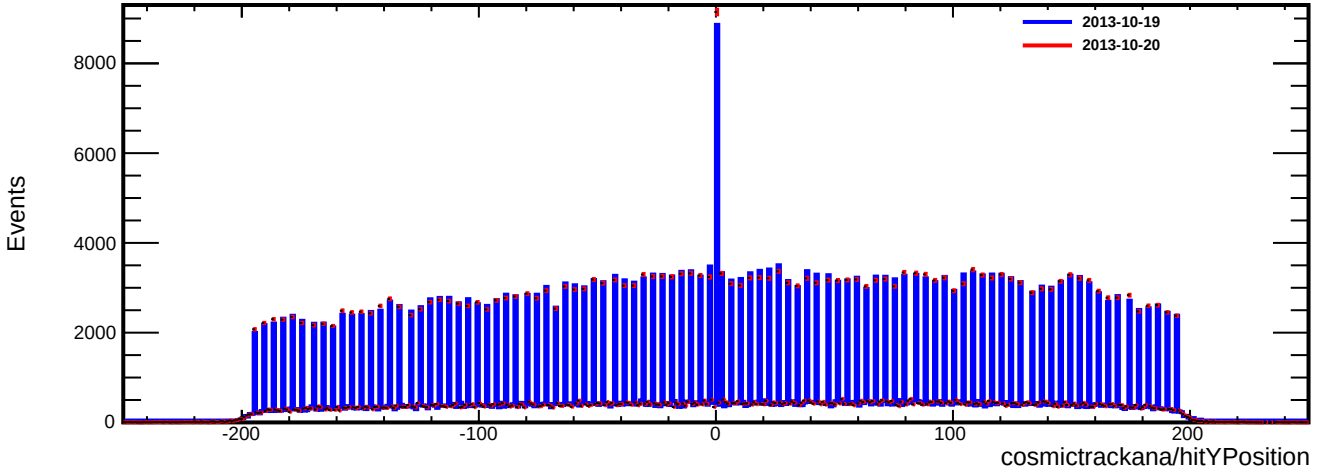

Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
500
1000
1500
cosmictrackana/trackLength
Asymmetry

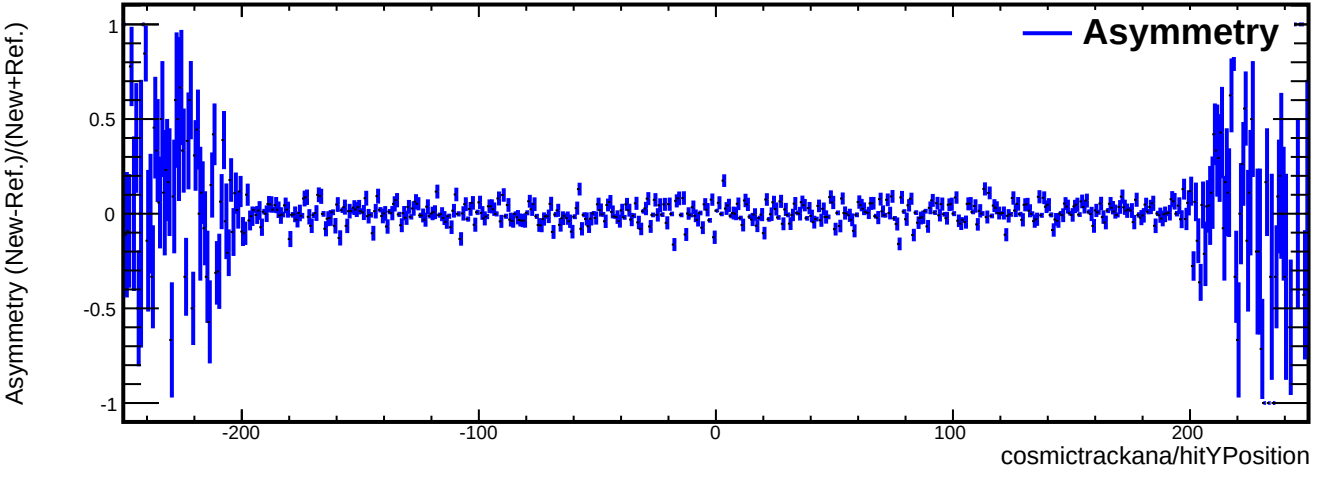

2013-10-19
2013-10-20
Events
1200
1000
800
600
400
200
0
0
0.2
0.4
0.6
0.8
1
cosmictrackana/coscosmic

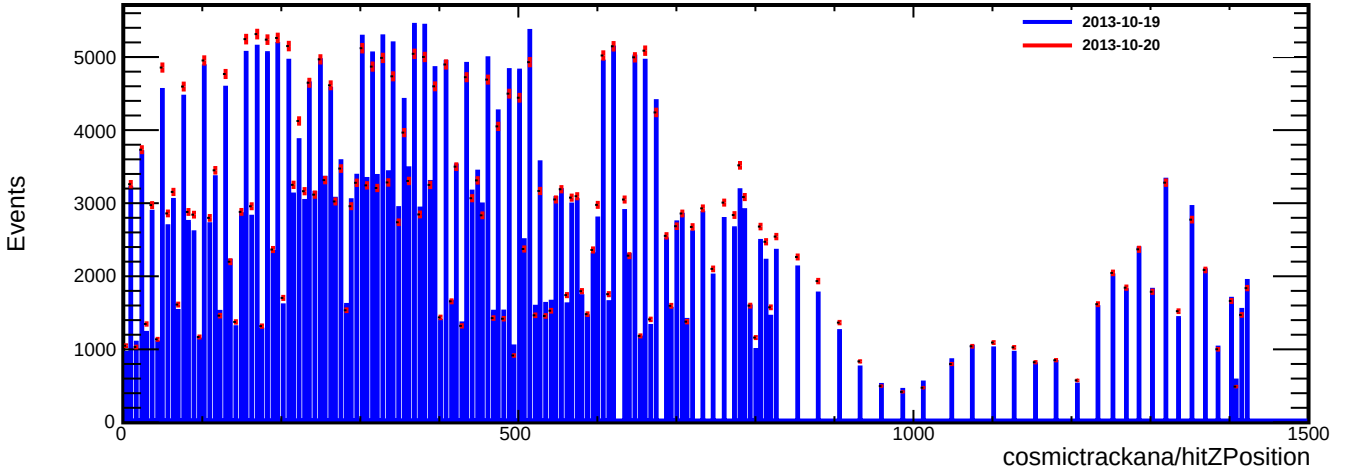

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
0.2
0.4
0.6
0.8
1
cosmictrackana/coscosmic

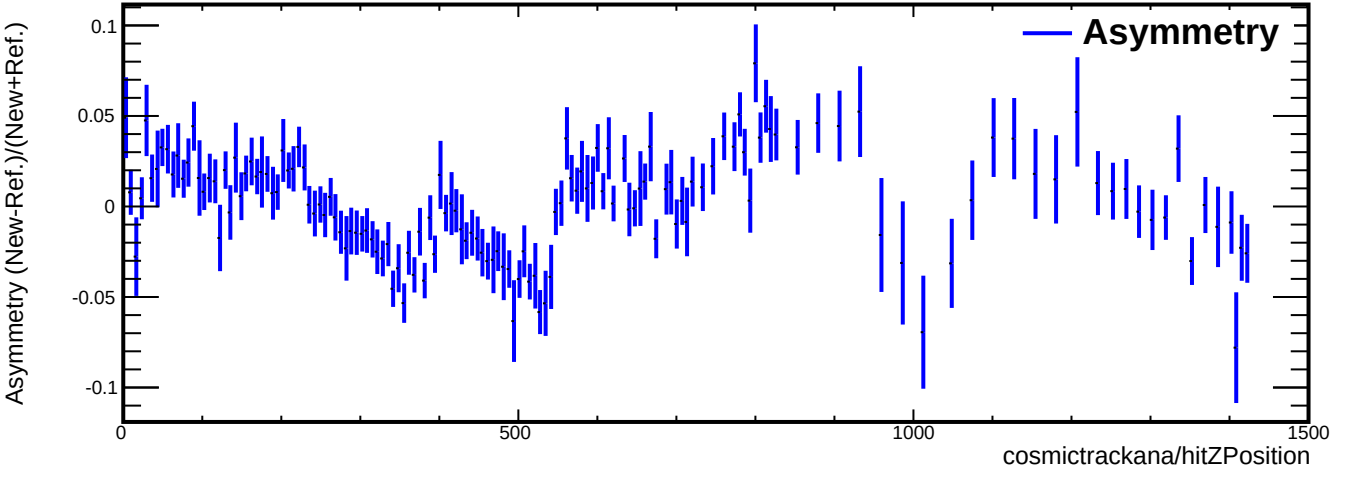

2013-10-19
2013-10-20
Events
4000
3000
2000
1000
0
-200
-100
0
100
200
cosmictrackana/hitXPosition

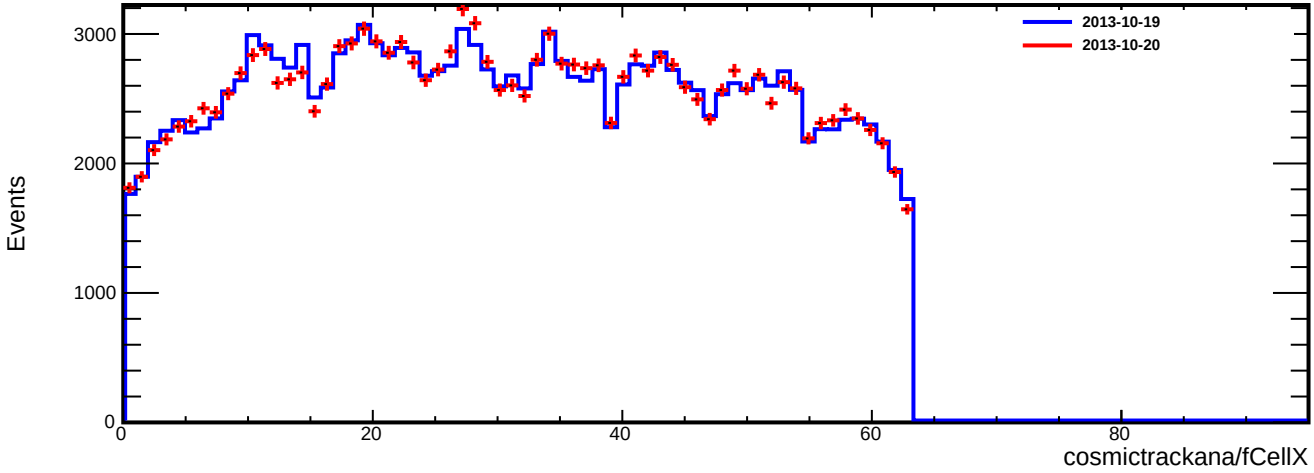

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-200
-100
0
100
200
cosmictrackana/hitXPosition

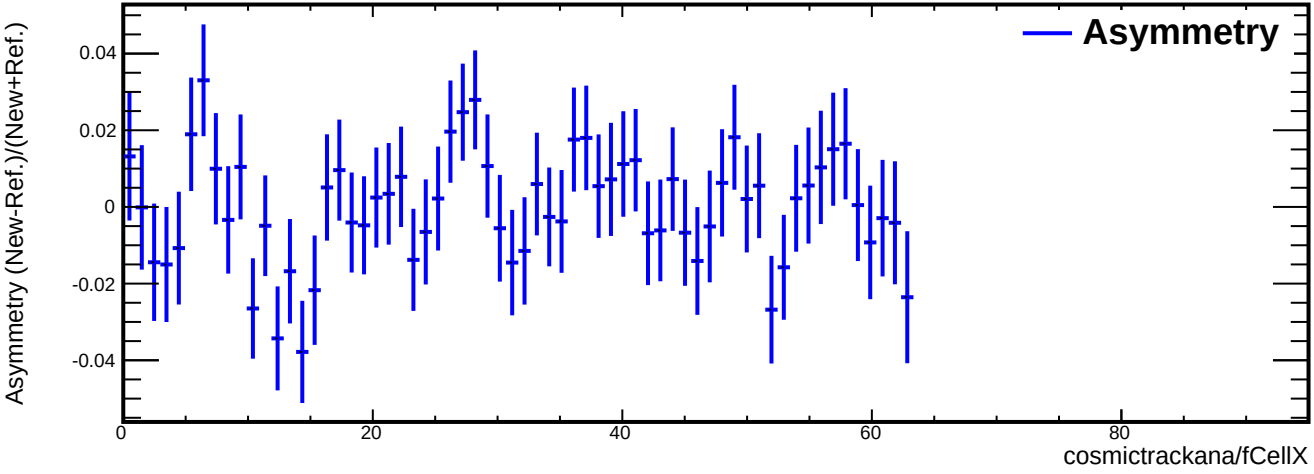

2013-10-19
2013-10-20
Events
8000
6000
4000
2000
0
-200
-100
0
100
200
cosmictrackana/hitYPosition

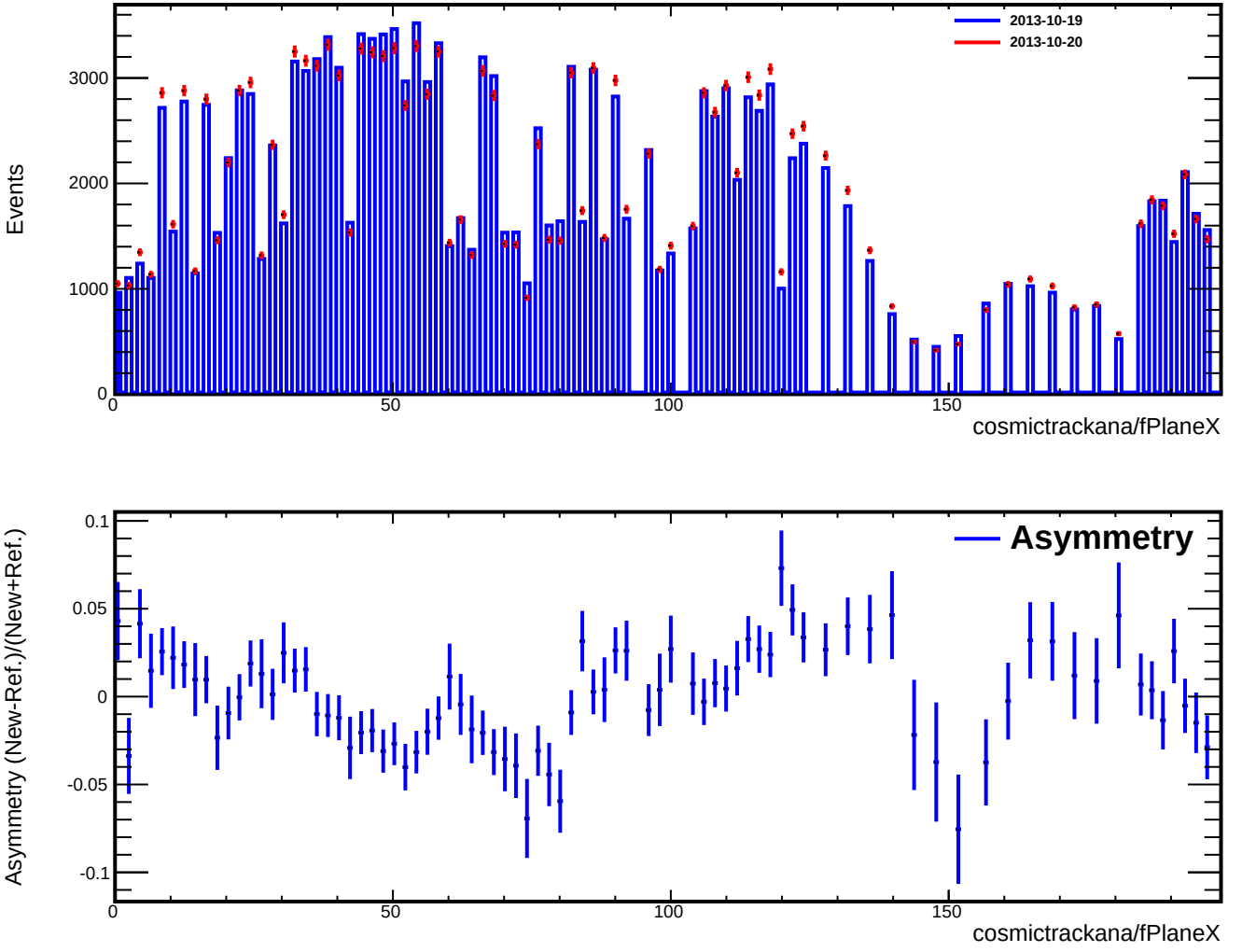

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
-200
-100
0
100
200
cosmictrackana/hitYPosition

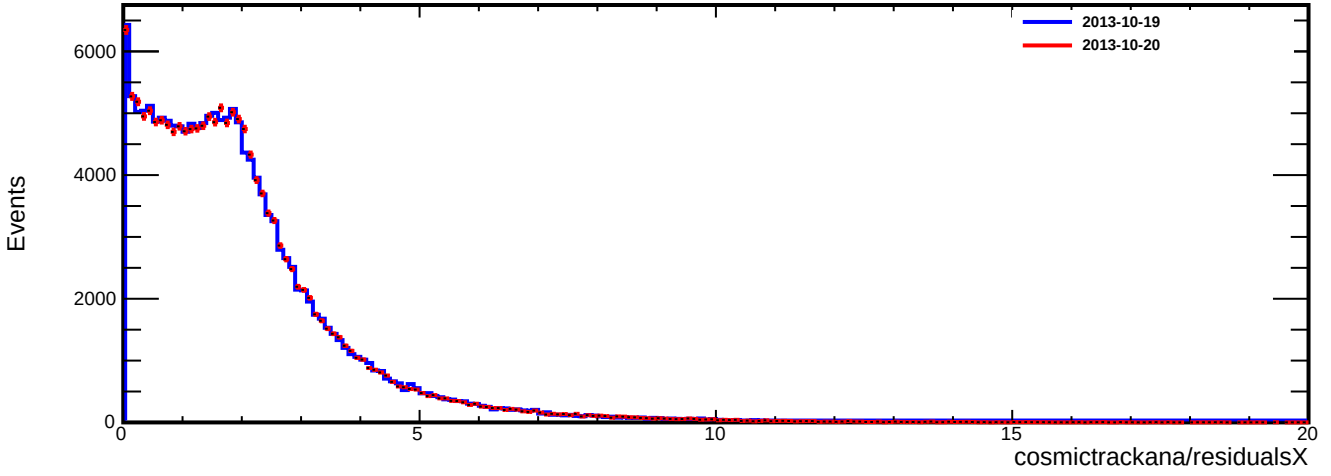

2013-10-19
2013-10-20
Events
0
1000
2000
3000
4000
5000
0
500
1000
1500
cosmictrackana/hitZPosition

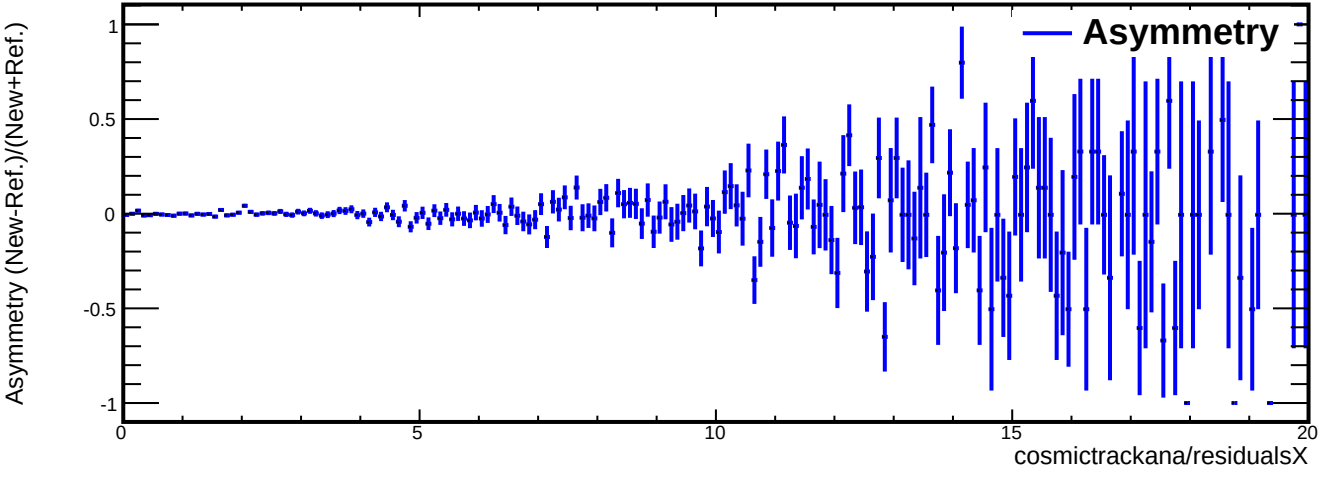

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.1
0.05
0
-0.05
-0.1
0
500
1000
1500
cosmictrackana/hitZPosition

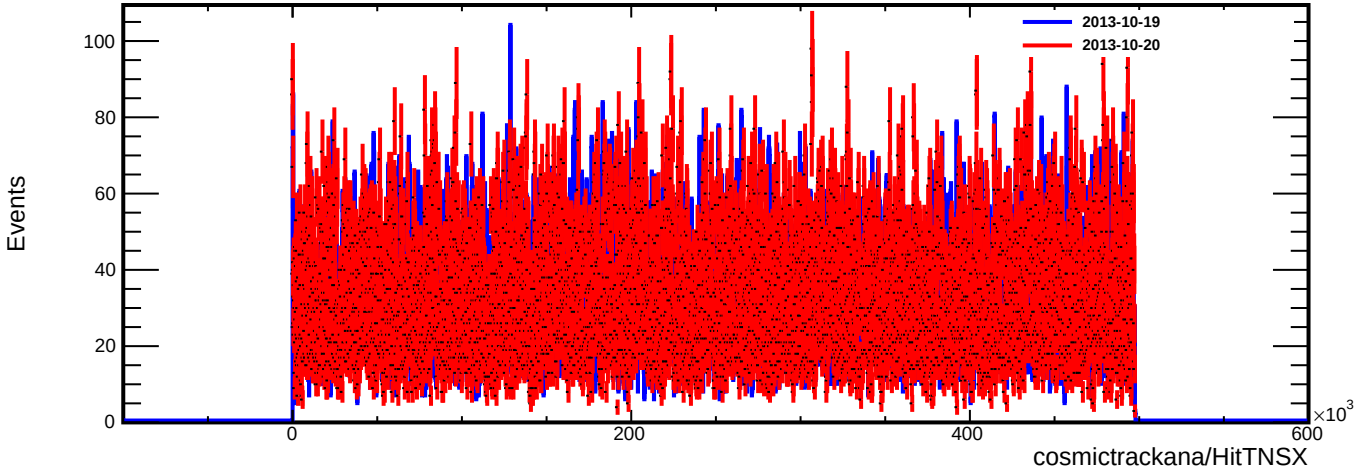

2013-10-19
2013-10-20
Events
3000
2000
1000
0
0
20
40
60
80
cosmictrackana/fCellX

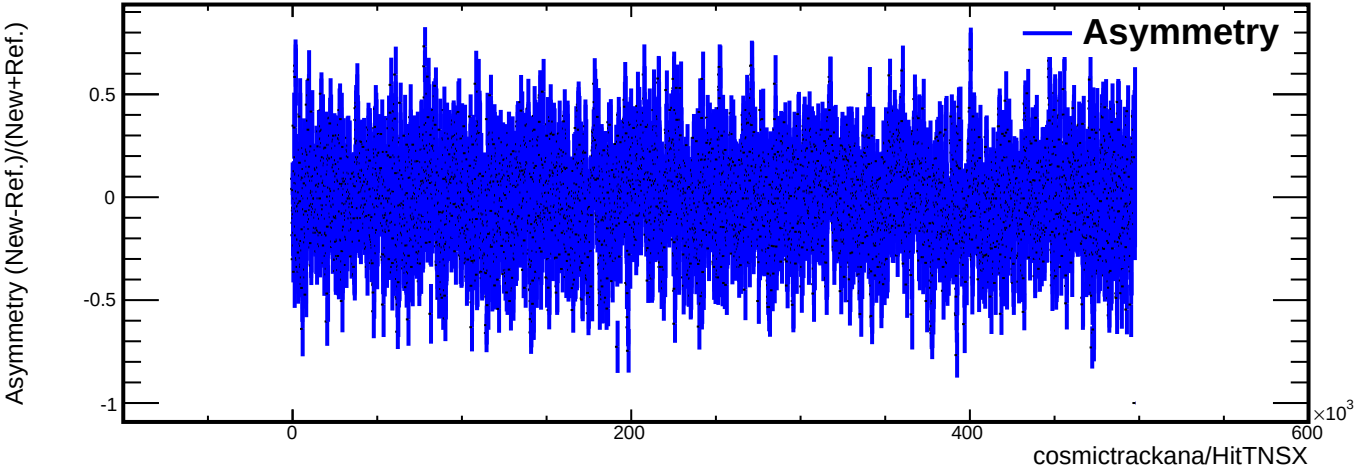

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.04
0.02
0
-0.02
-0.04
0
20
40
60
80
cosmictrackana/fCellX

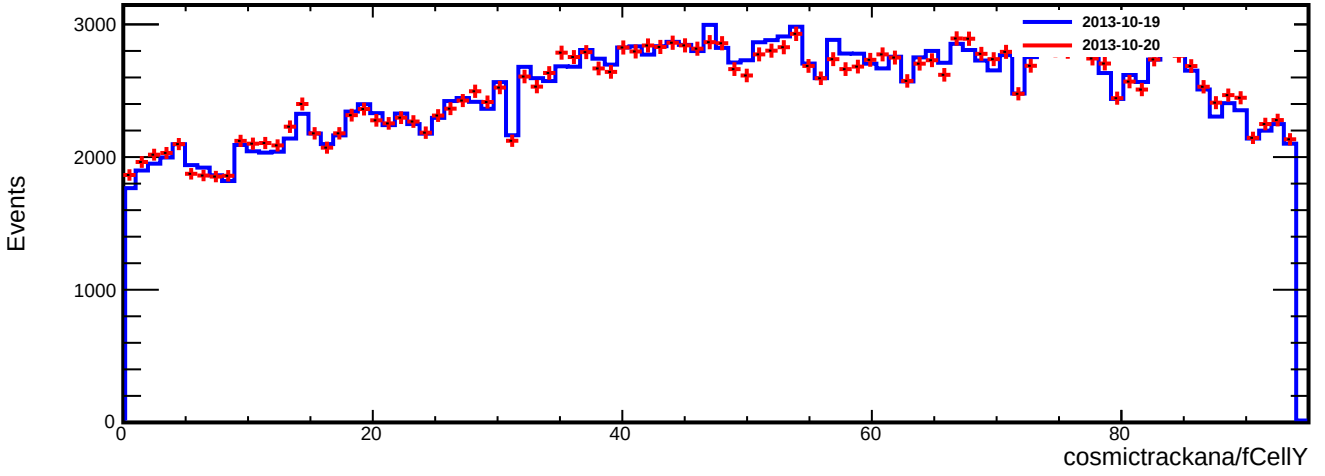

2013-10-19
2013-10-20
Events
0
1000
2000
3000
0
50
100
150
cosmictrackana/fPlaneX
Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.1
0.05
0
-0.05
-0.1
0
50
100
150
cosmictrackana/fPlaneX

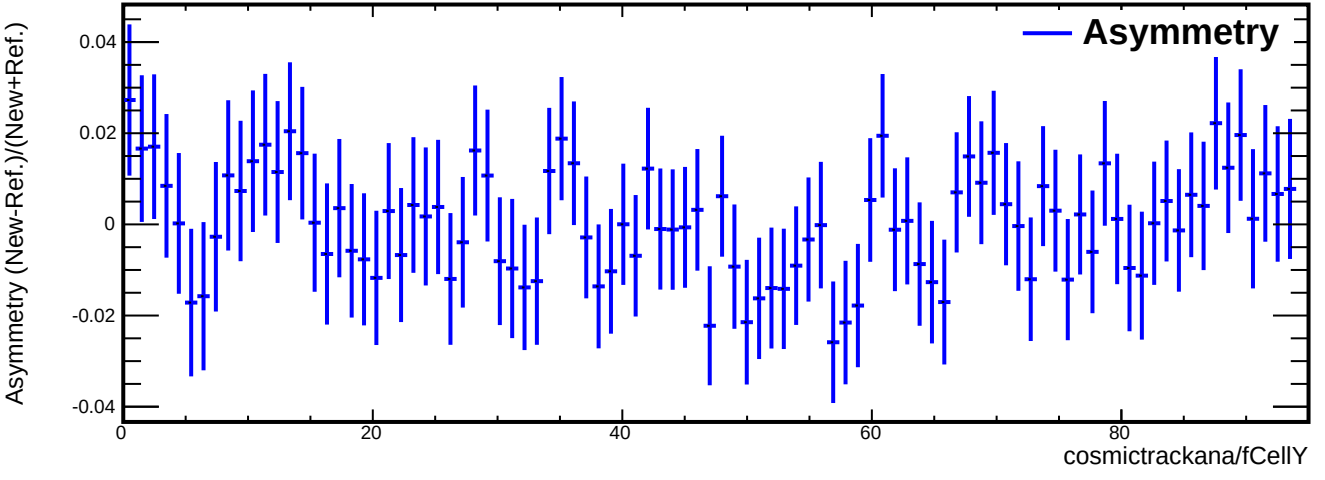

2013-10-19
2013-10-20
Events
6000
4000
2000
0
0
5
10
15
20
cosmictrackana/residualsX

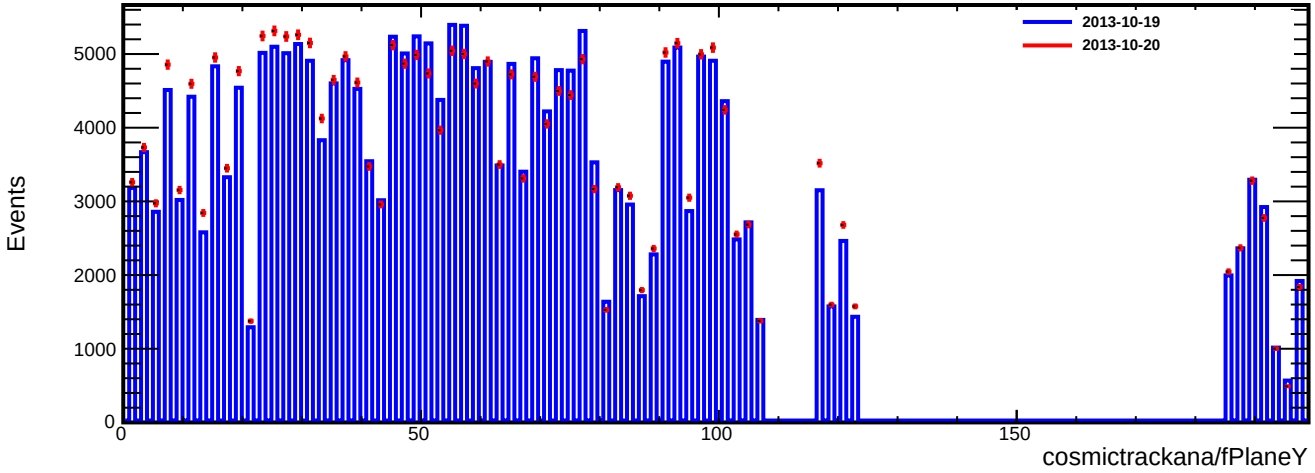

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
5
10
15
20
cosmictrackana/residualsX

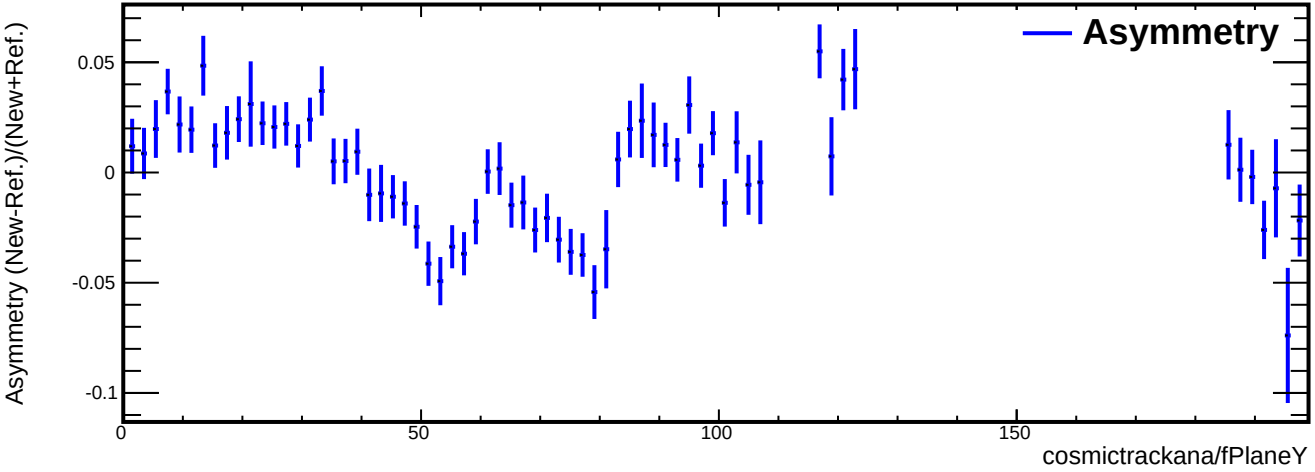

2013-10-19
2013-10-20
Events
100
80
60
40
20
0
0
200
400
600
×10^3
cosmictrackana/HitTNSX

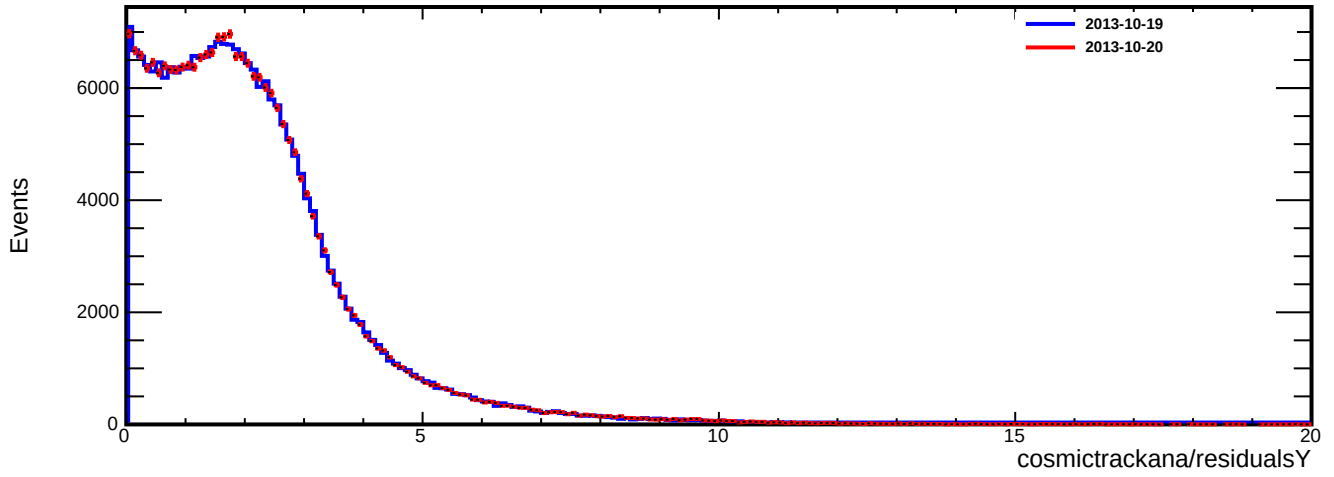

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.5
0
-0.5
-1
0
200
400
600
×10^3
cosmictrackana/HitTNSX

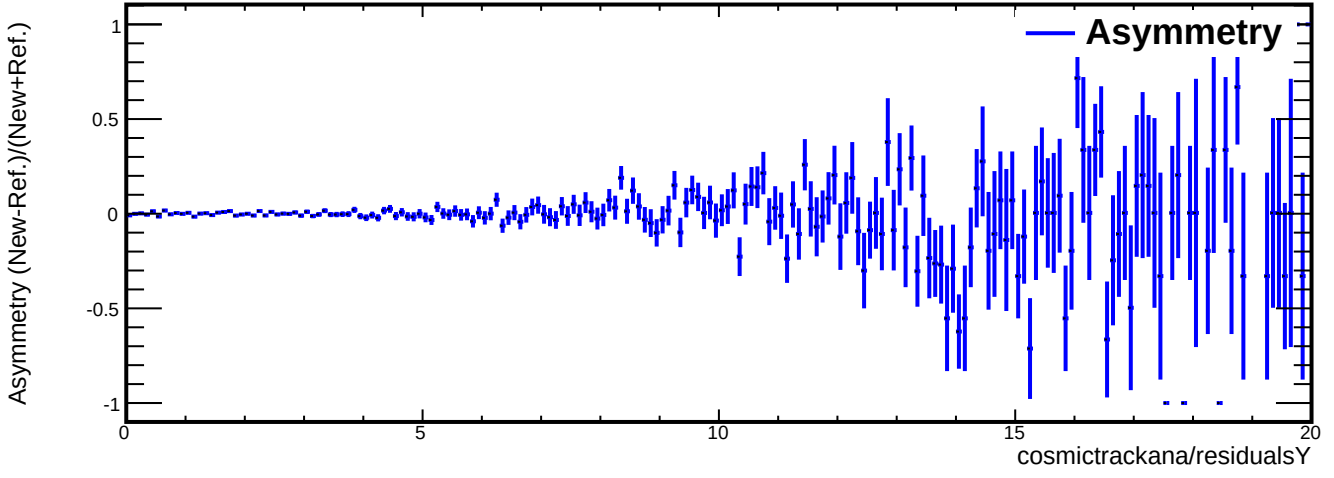

2013-10-19
2013-10-20
Events
3000
2000
1000
0
0
20
40
60
80
cosmictrackana/fCellY

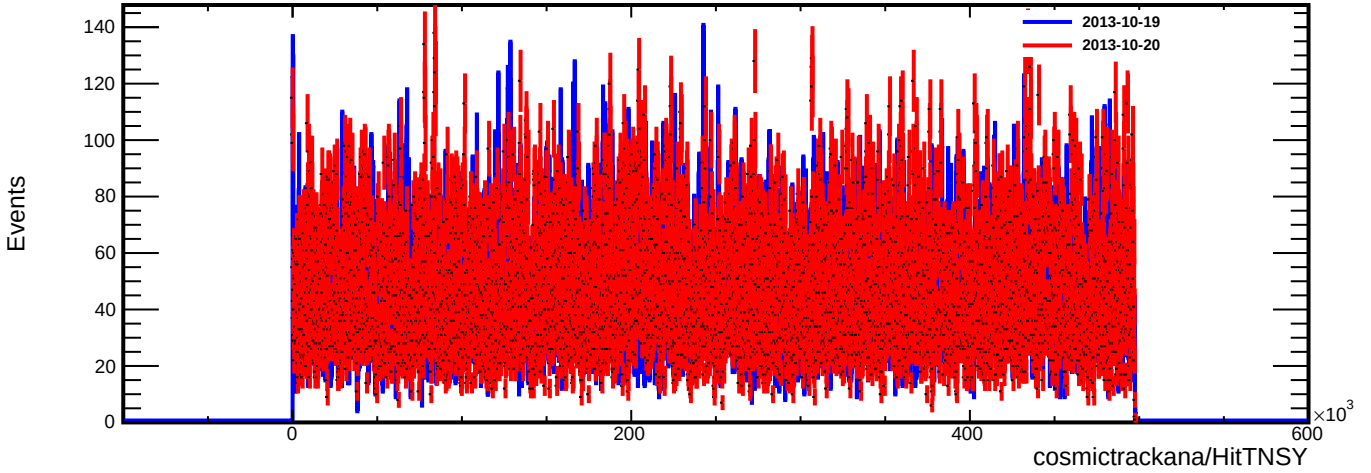

Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.04
0.02
0
-0.02
-0.04
0
20
40
60
80
cosmictrackana/fCellY

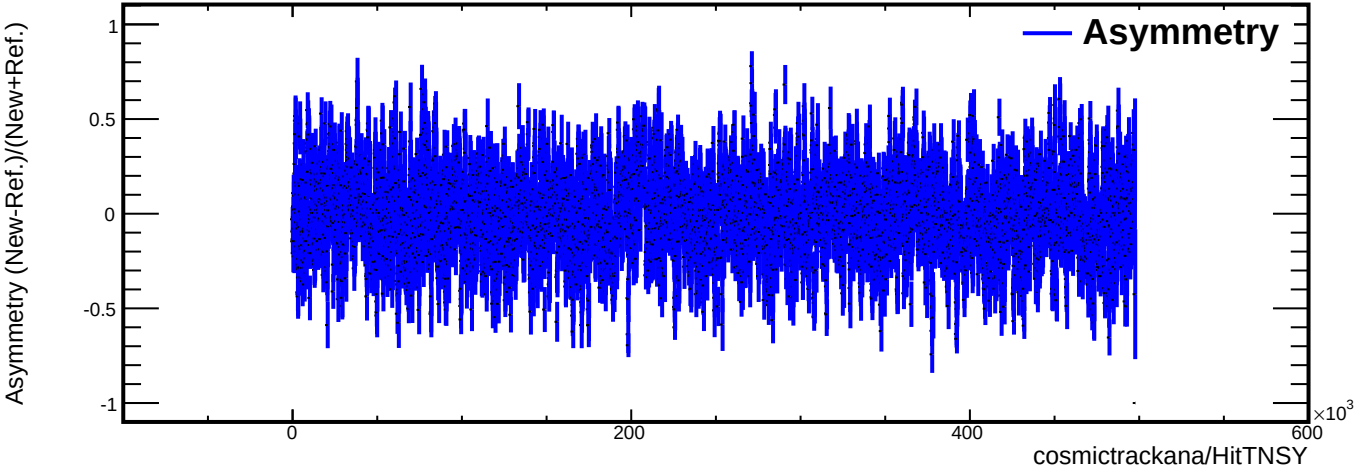

2013-10-19
2013-10-20
Events
0
1000
2000
3000
4000
5000
0
50
100
150
cosmictrackana/fPlaneY


Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
0.05
0
-0.05
-0.1
0
50
100
150
cosmictrackana/fPlaneY


2013-10-19
2013-10-20
Events
6000
4000
2000
0
0
5
10
15
20
cosmictrackana/residualsY


Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
5
10
15
20
cosmictrackana/residualsY


2013-10-19
2013-10-20
Events
140
120
100
80
60
40
20
0
0
200
400
600
×10^3
cosmictrackana/HitTNSY


Asymmetry
Asymmetry (New-Ref.)/(New+Ref.)
1
0.5
0
-0.5
-1
0
200
400
600
×10^3
cosmictrackana/HitTNSY