CPR Reconstruction Validation

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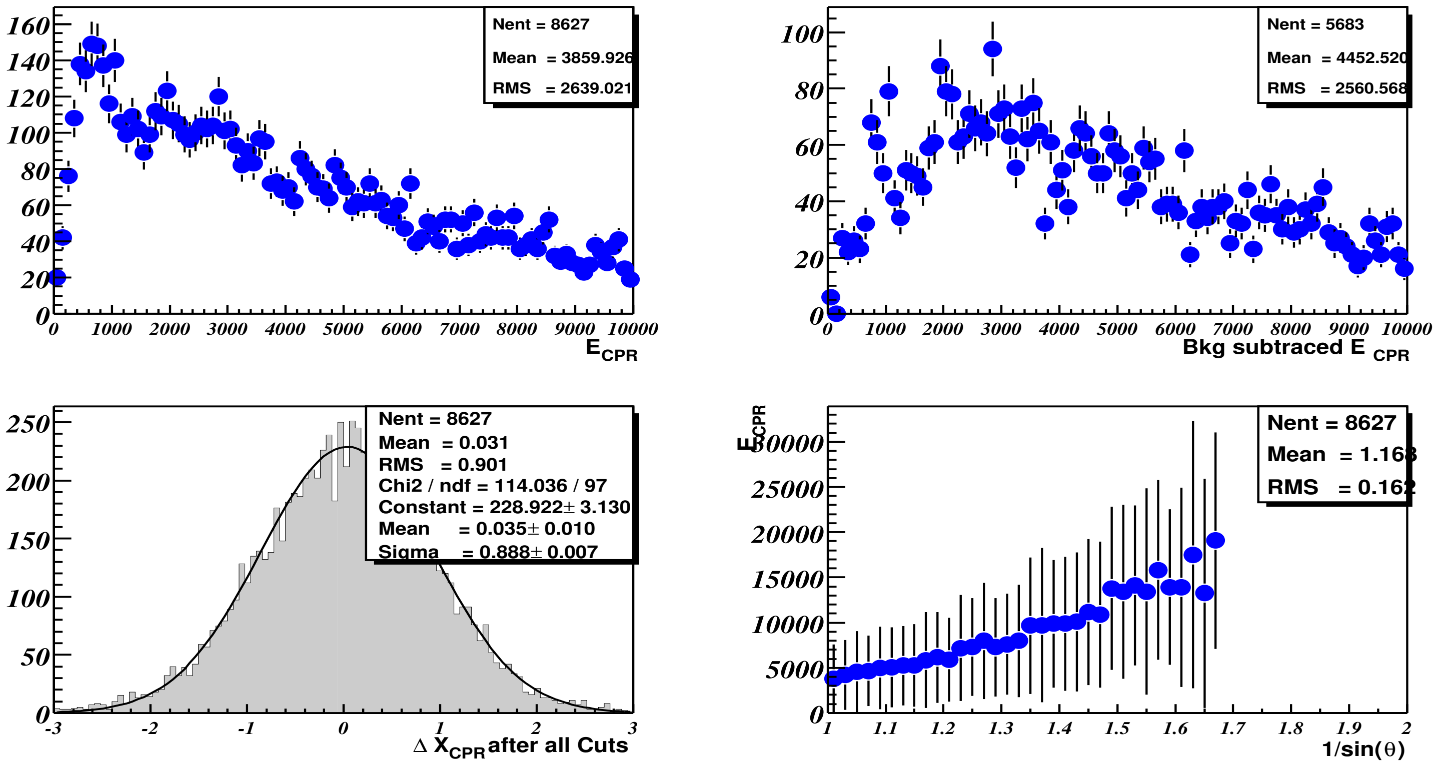
- Validation using conversions and muons from J/Psi sample
- Version used : 4.5.0
- Conversion runs : 138425-140156
- J/Psi runs : 138425-141213
- Output of CprClusterMon - Validation in production farms and monitoring

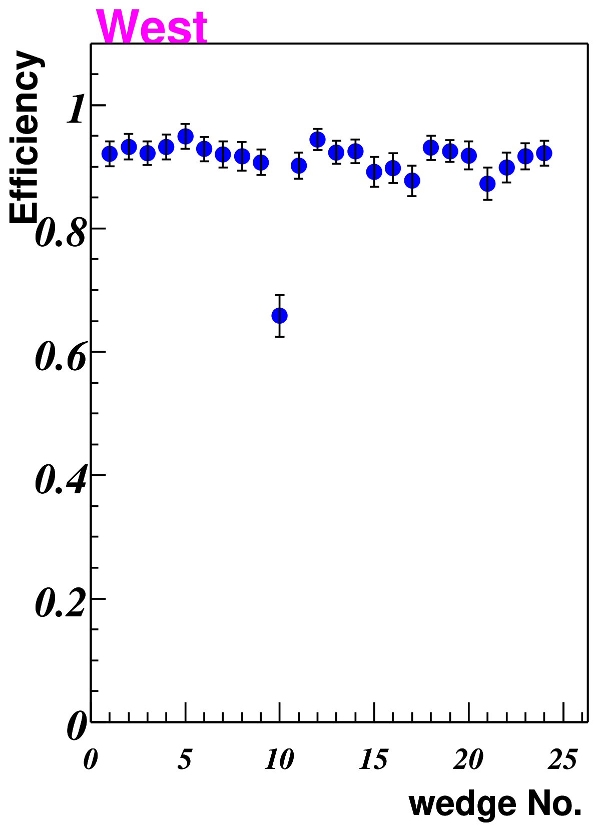
After Conversion Selection

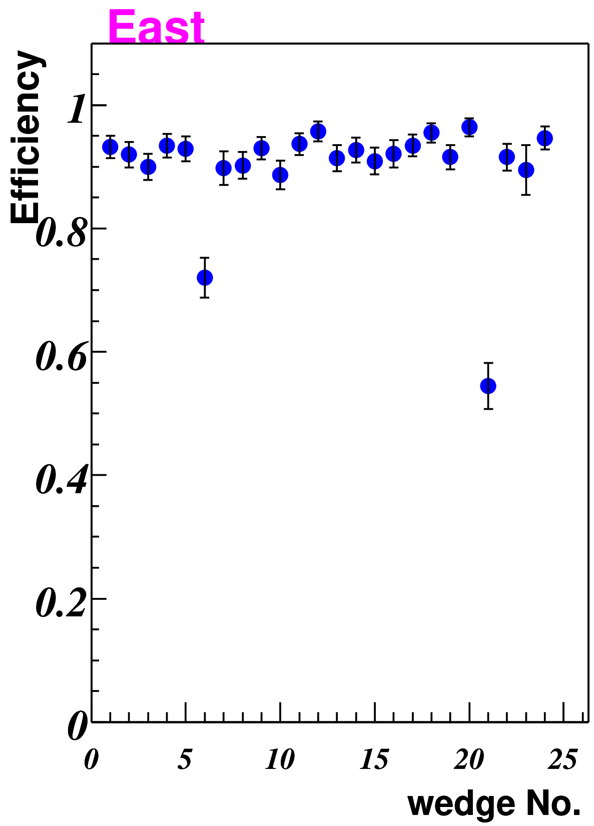
- $\Delta XY < 0.2cm, \Delta(\cot\theta) < 0.05, Radius > 20.0cm$

CPR Quality



CPR reconstruction efficiency for conversions

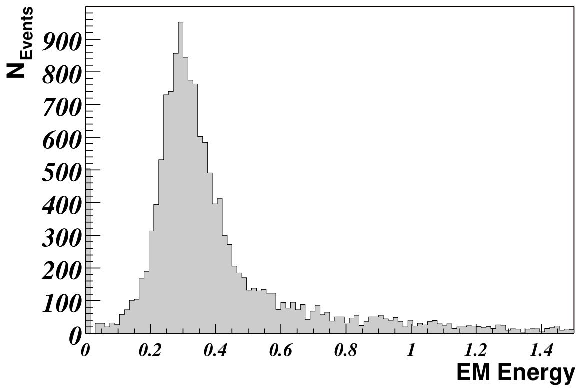


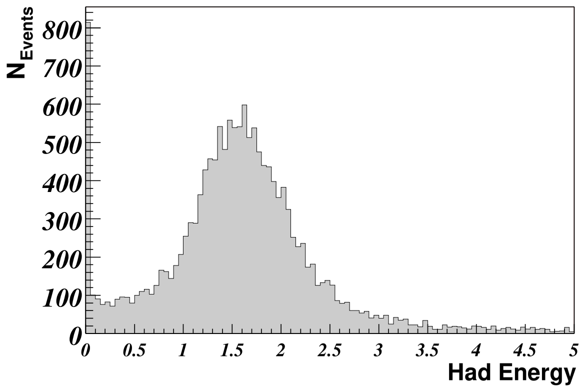


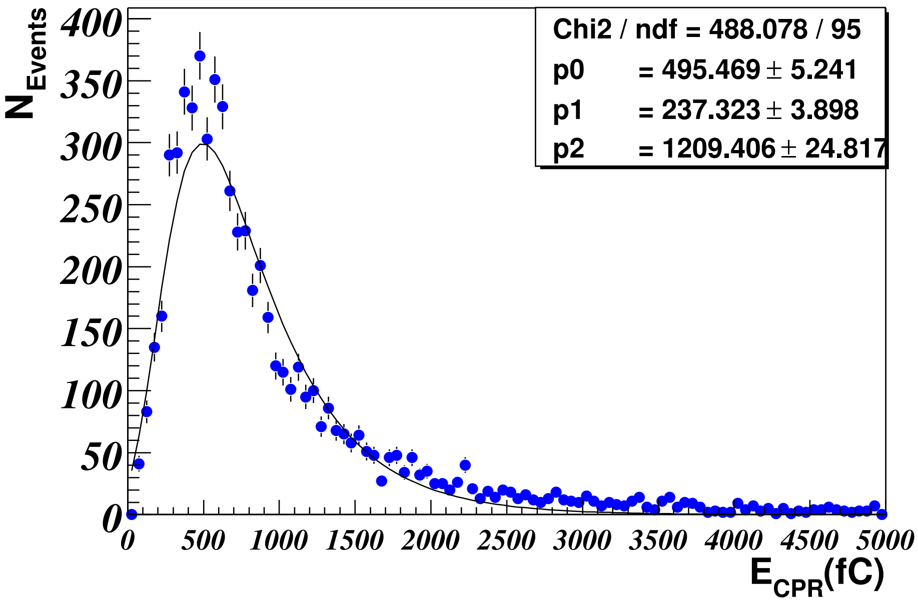
- Efficiency excluding dead regions 92%

Muon Selection and Quality

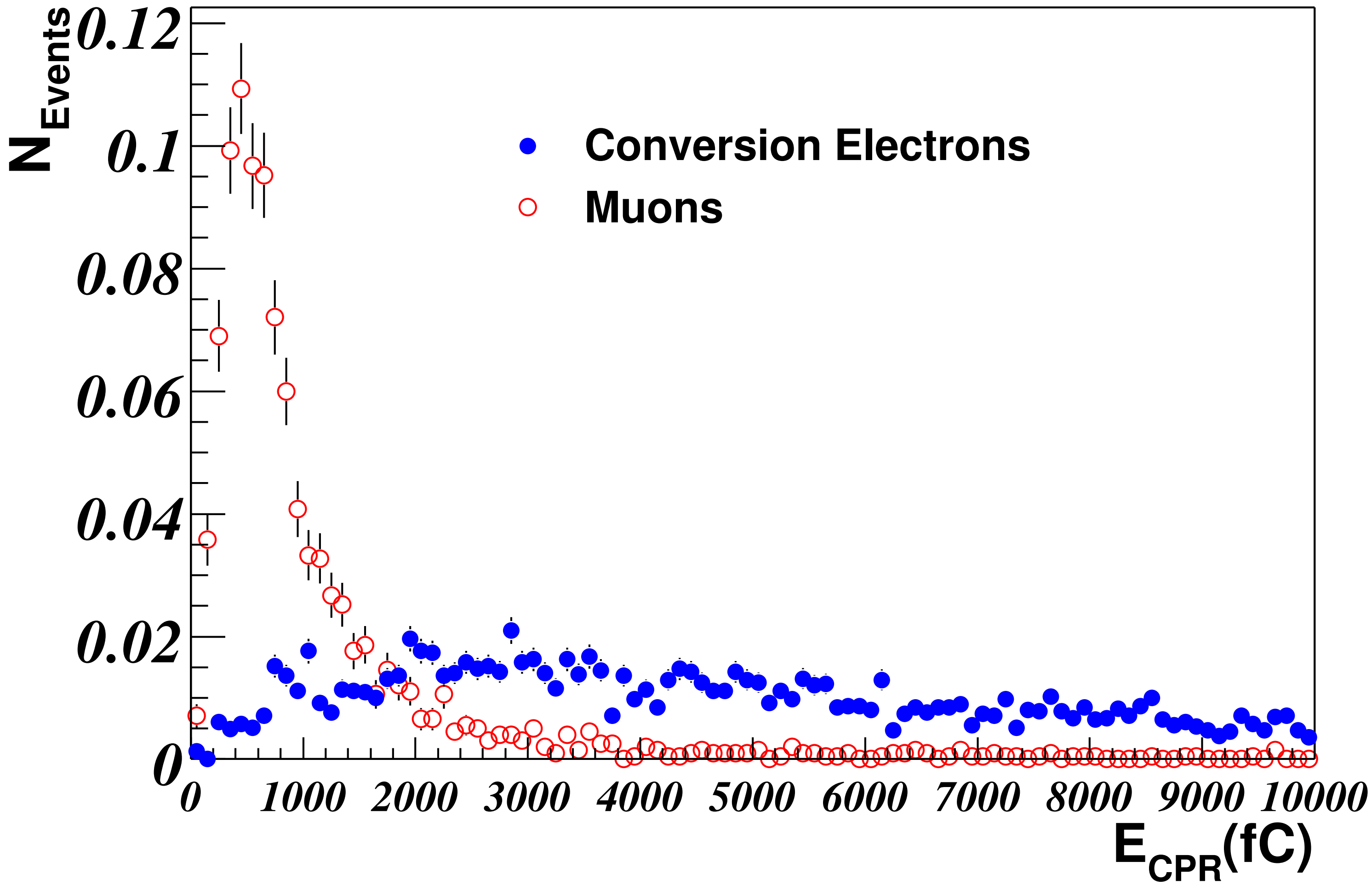
- Use muons in the J/Ψ peak between 3.0 to 3.2 GeV.
- Consistent with MIP - Cuts on Em Energy $(< 2.0GeV)$ and Had Energy $(< 6.0GeV)$







CPR charge for conversions and muons



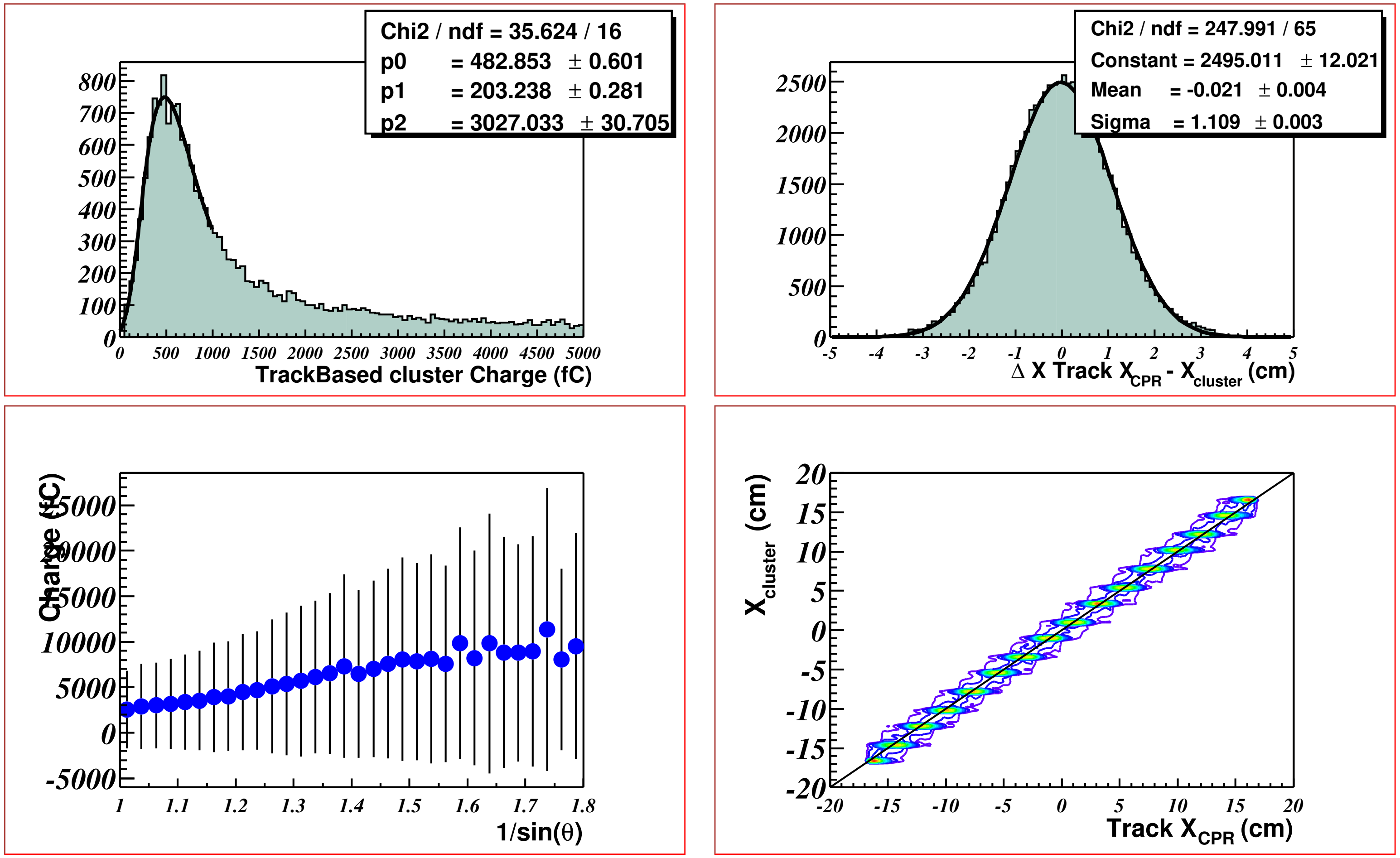
CPR Monitoring

- CprClusterMon is run in production farms.
- Monitoring scripts ready and working. Run on production histograms in cdfprod0 area in fcdlnx3.fnal.gov
- Output of CprClusterMon monitored in webpage :

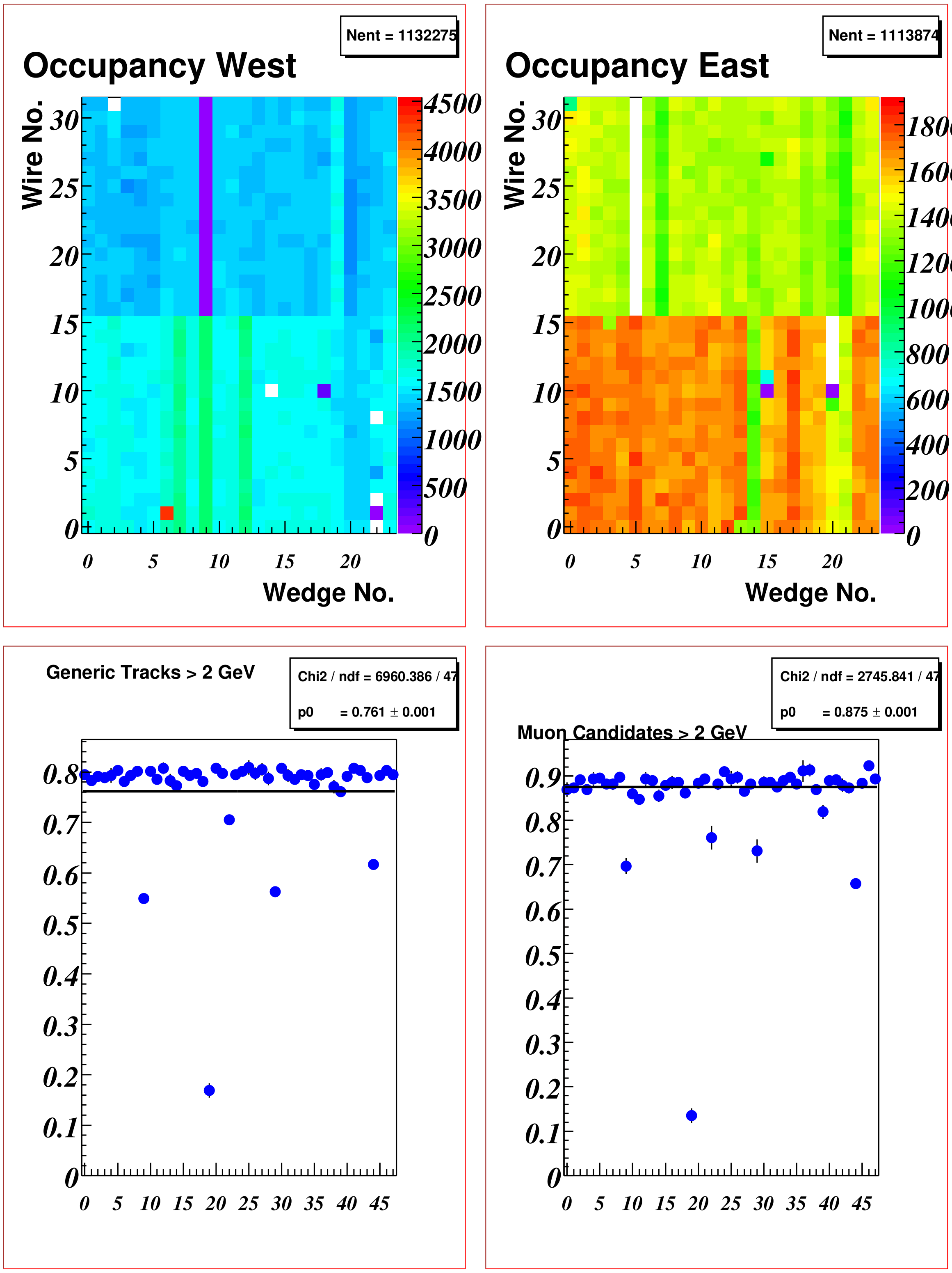
  `http://www-cdf.fnal.gov/~tmoulik/cprmon/cprmon.html`
- Identify bad runs for CPR from efficiency plots and MIP peak values (calibration problems).
- Provides plots for individual runs and efficiency/MIP peak vs Run No.
- Reconstruction efficiency worse in recent runs. Need to study alignment corrections.

Run 142671 StreamA

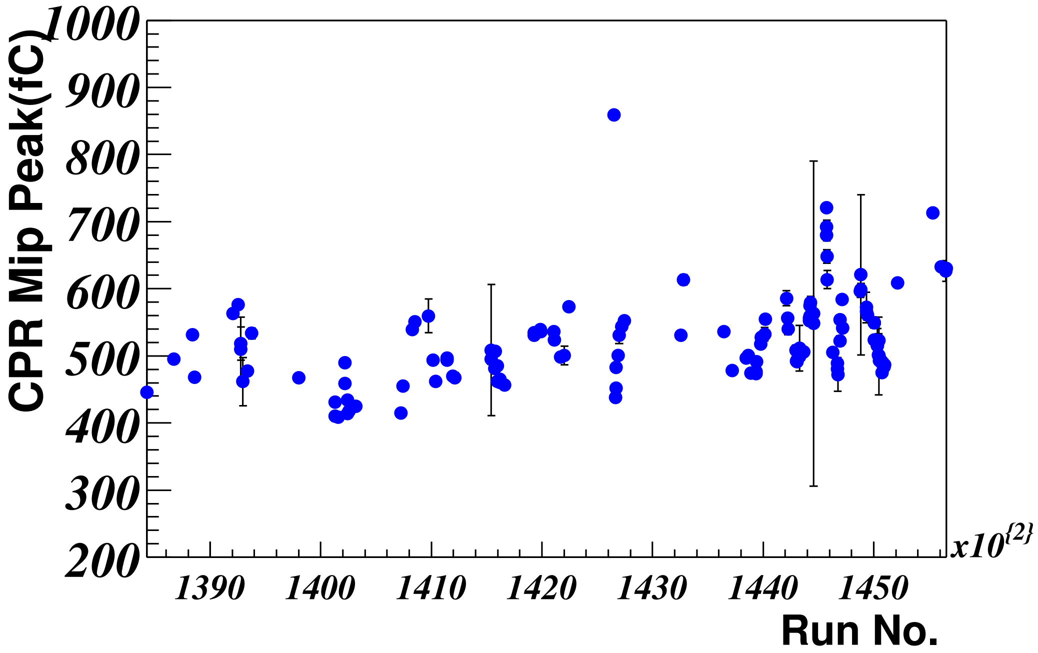
TrackBased CPR Cluster

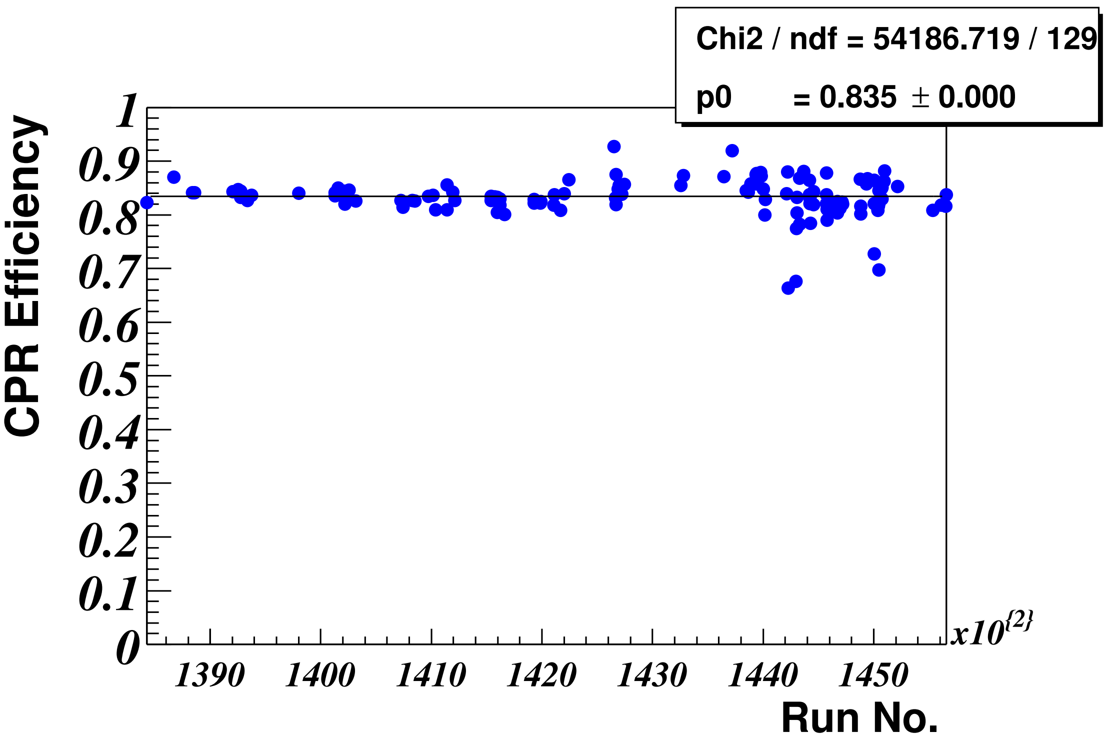


Run 142671 StreamA



138425-145608





- Efficiency for older runs is better.
- J/Ψ Sample from August Runs. Run 123618-124603.
- 90% for generic and 95% for muon tracks.
- Output of CprClusterMon: