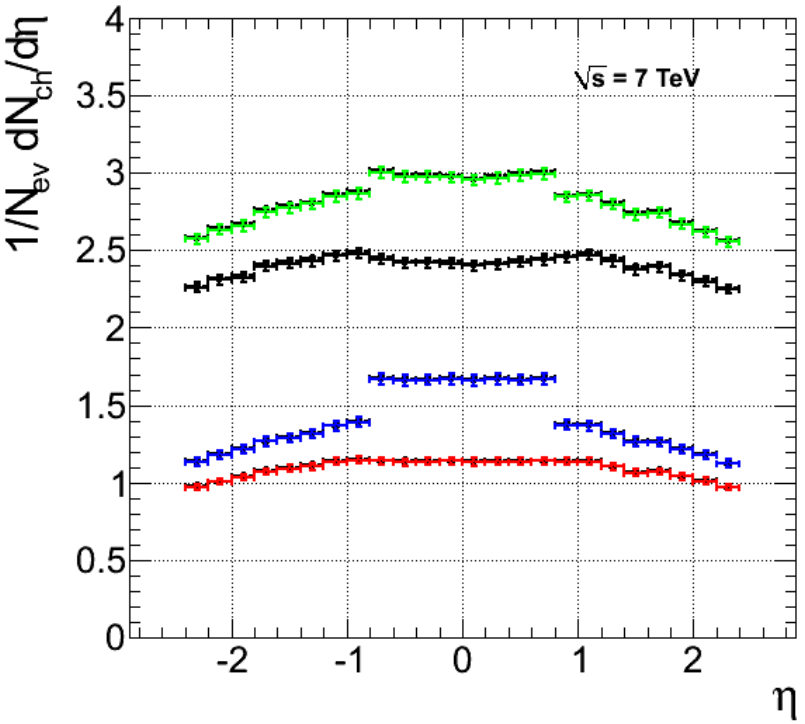
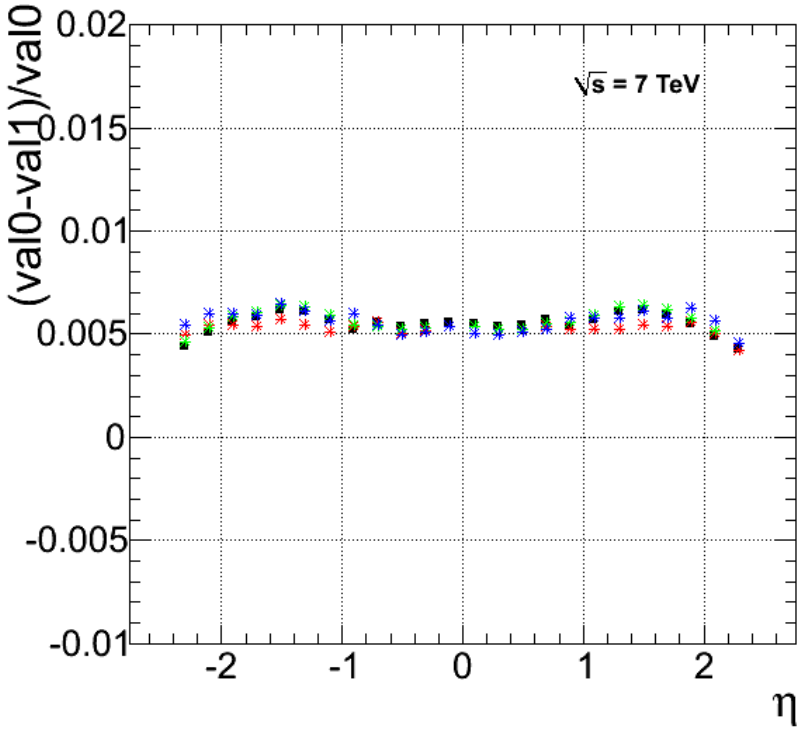
Systematics study: loose gen-reco matching

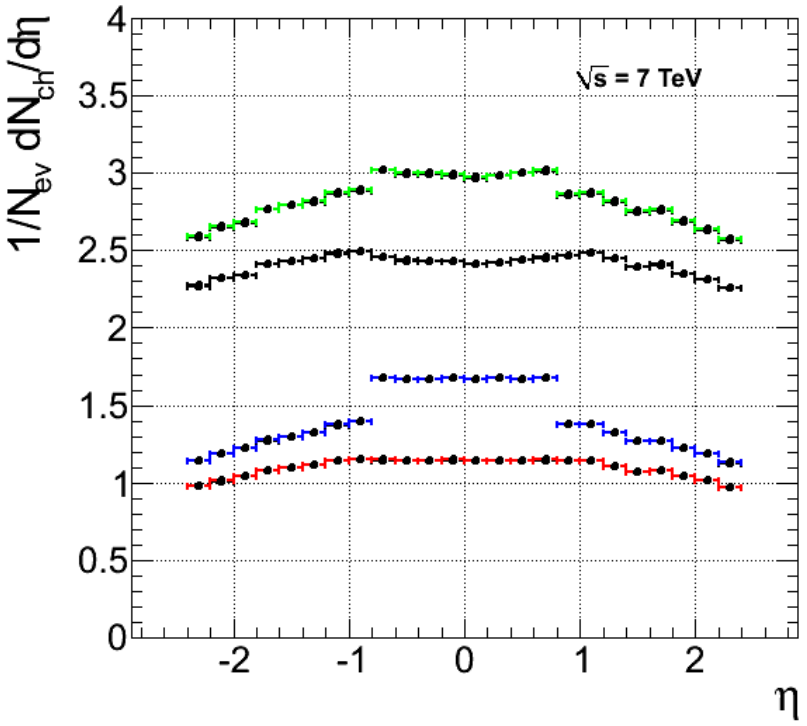
- Loose cuts on dR (from 0.04 to 0.1) and dPt (from 0.05,0.06,0.07) to 0.1

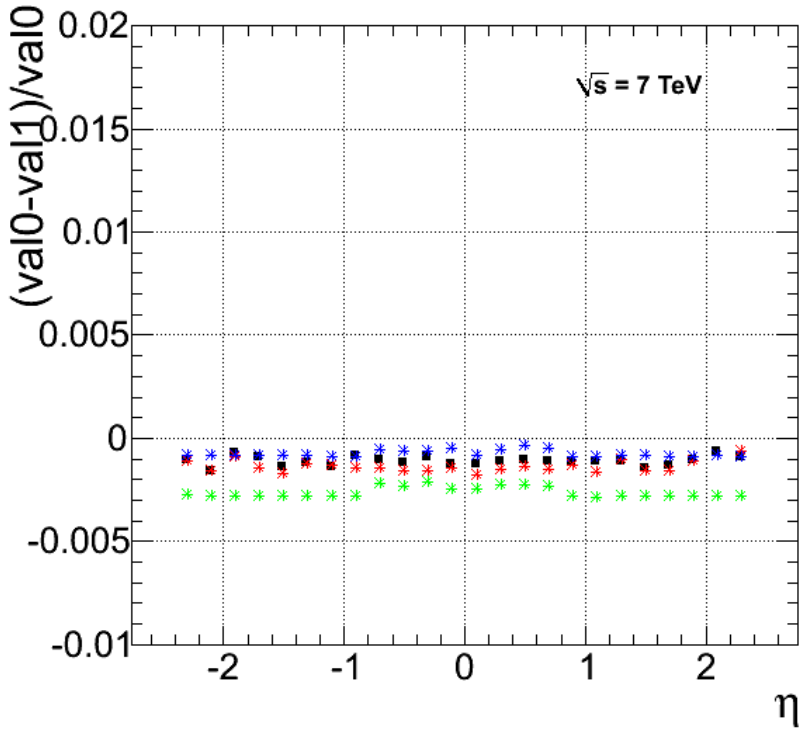




Systematics study: PV filter

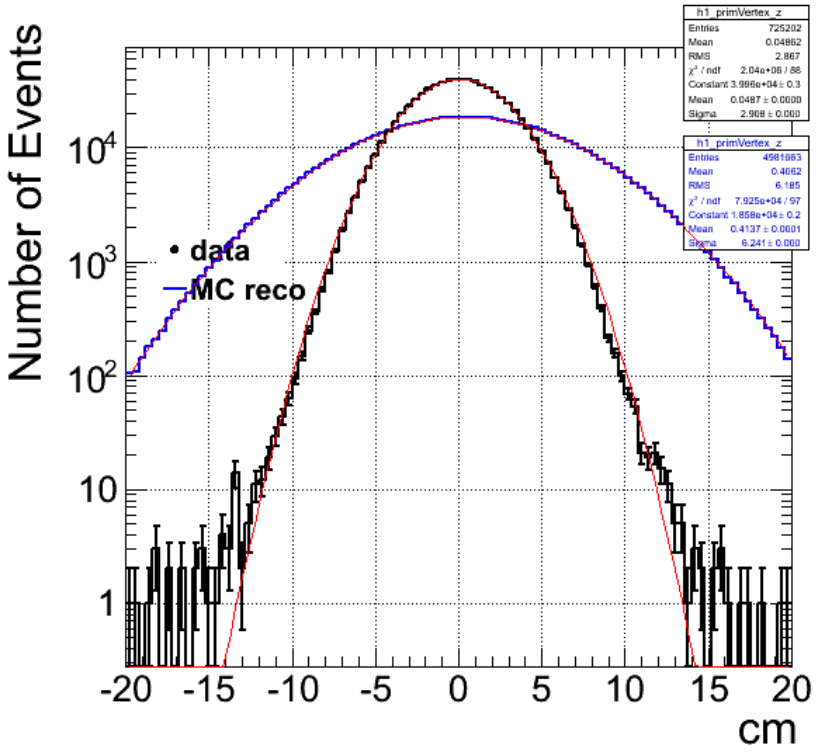
- No PV filter used (therefore $\varepsilon_{PV} = 1$ and $\varepsilon_{central}$ is different).

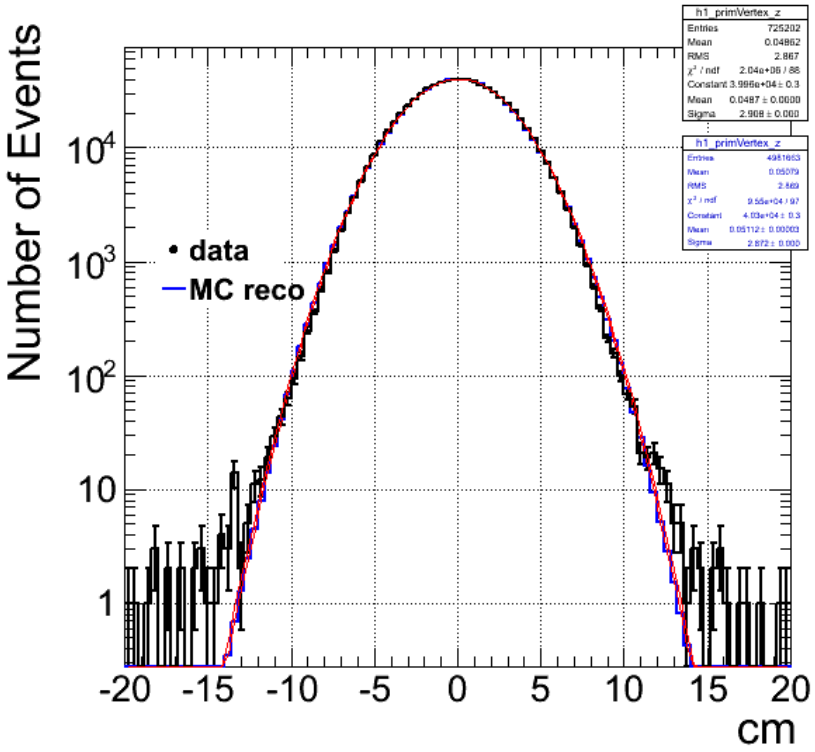




Systematics study: reweighting

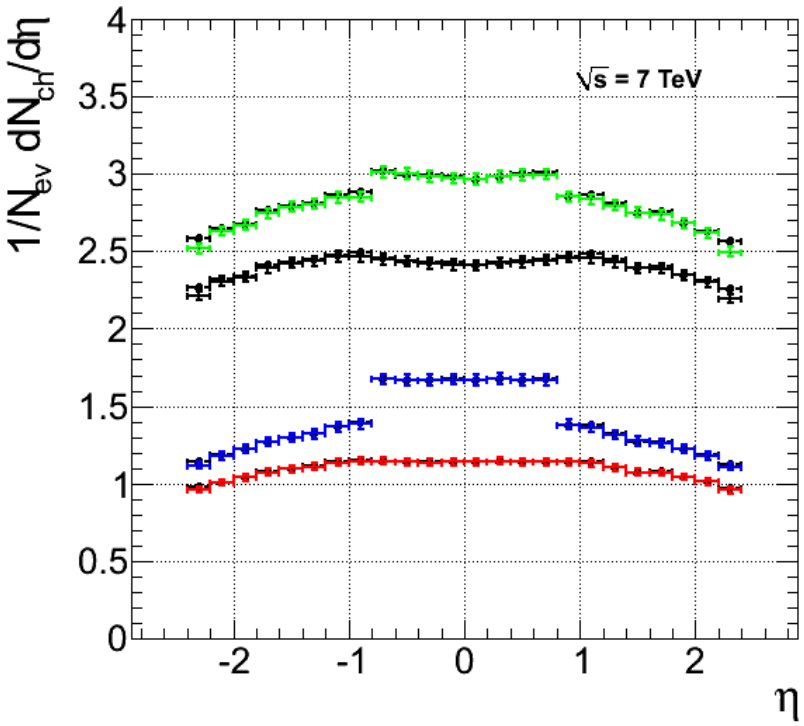
- BeamSpot position in MC is diferent than it is in Data.
- Based on z-plot of primary main vertex we can reweight MC events.

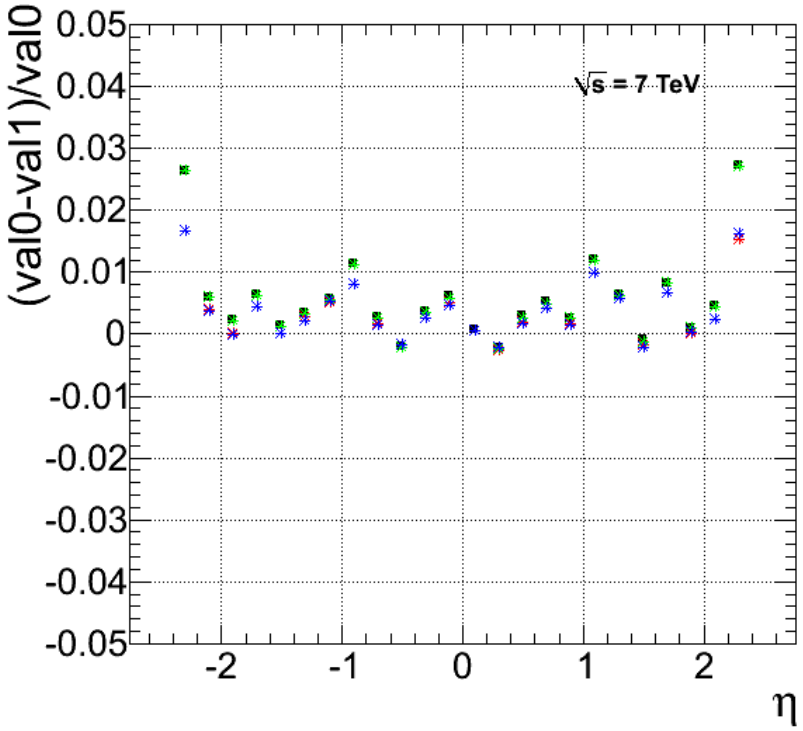




Systematics study: reweighting

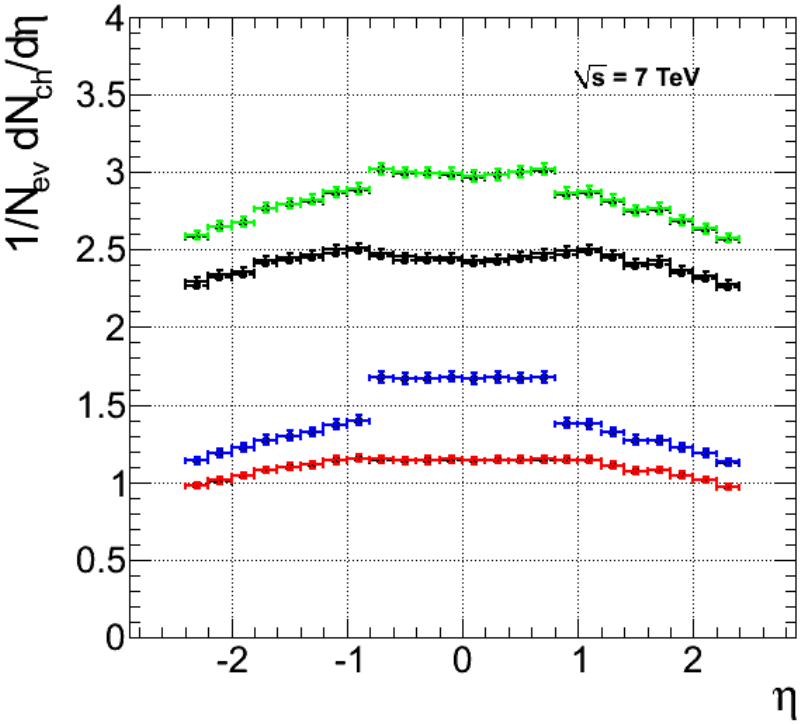
- Effect of reweighting

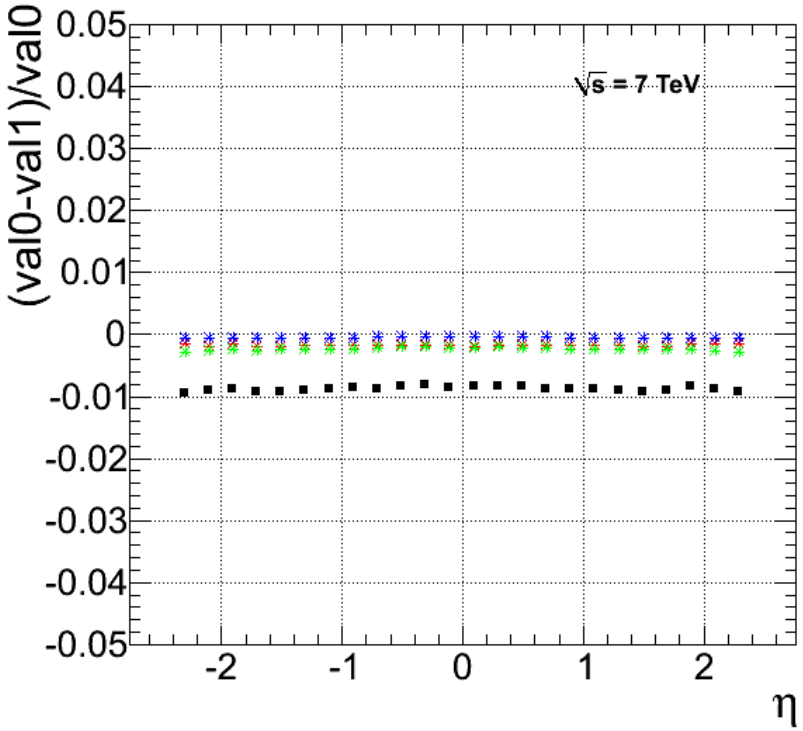




Systematics study: diffraction events

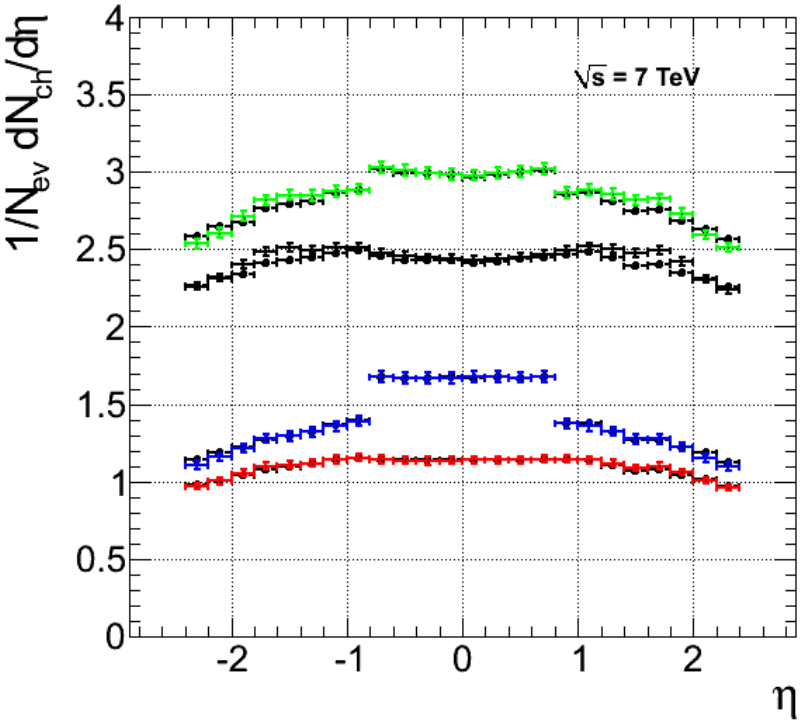
- From MC with diffraction events removed we obtain new ε_{PV} and $\varepsilon_{central}$
- Applied to data, here is an effect.

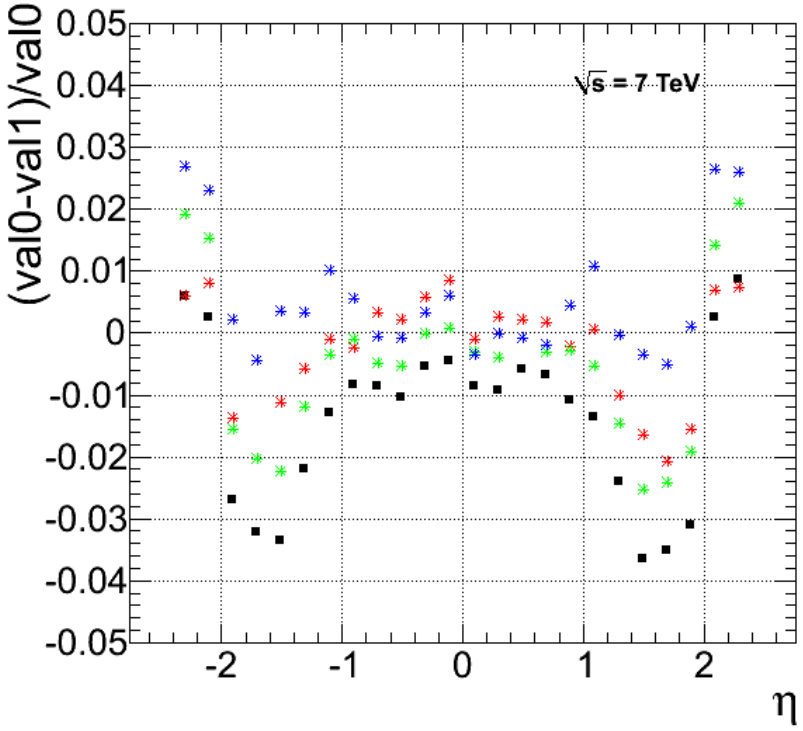




Systematics study: M-bining

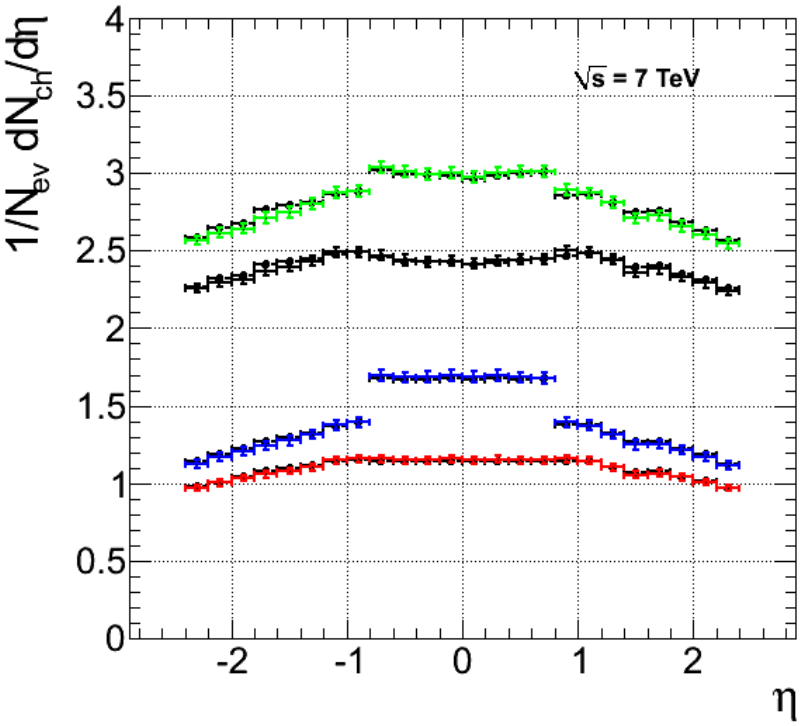
- Changing M-bins, such that: M[1] = 1,2,3 track, M[2] =4,5 track etc.

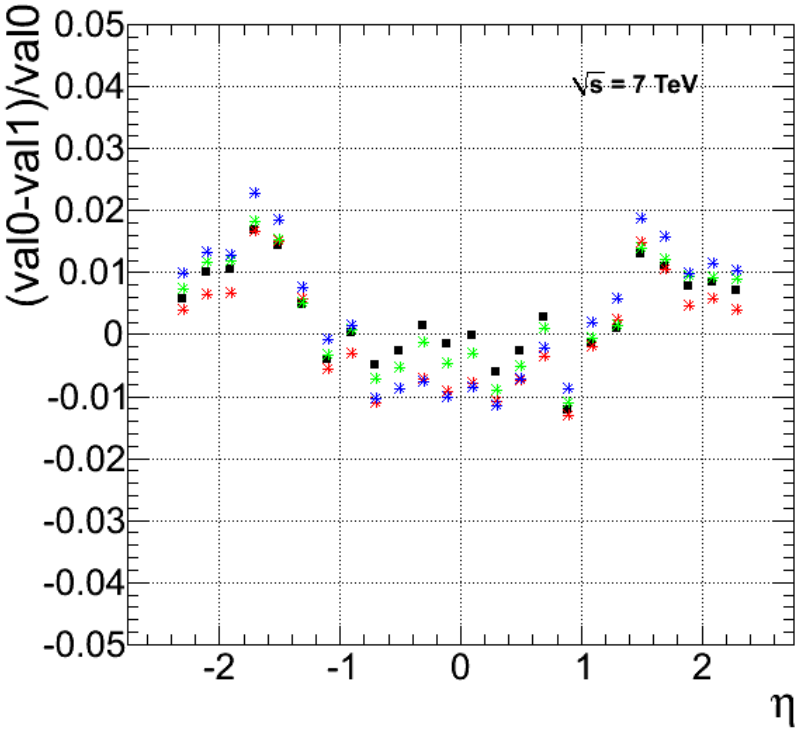




Systematics study: cuts on tracks

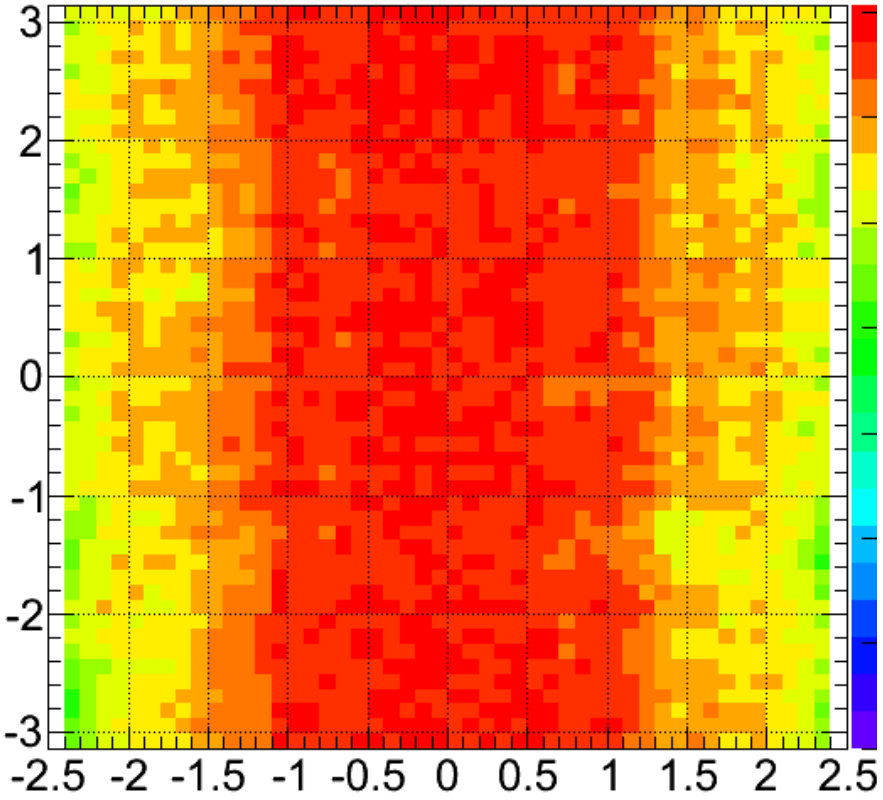
- apply strict cuts on tracks:
- nLayersWithMeasurements $>= 6$ (instead of $>= 4$) and ptError/pt < 0.06 (instead of 0.1)

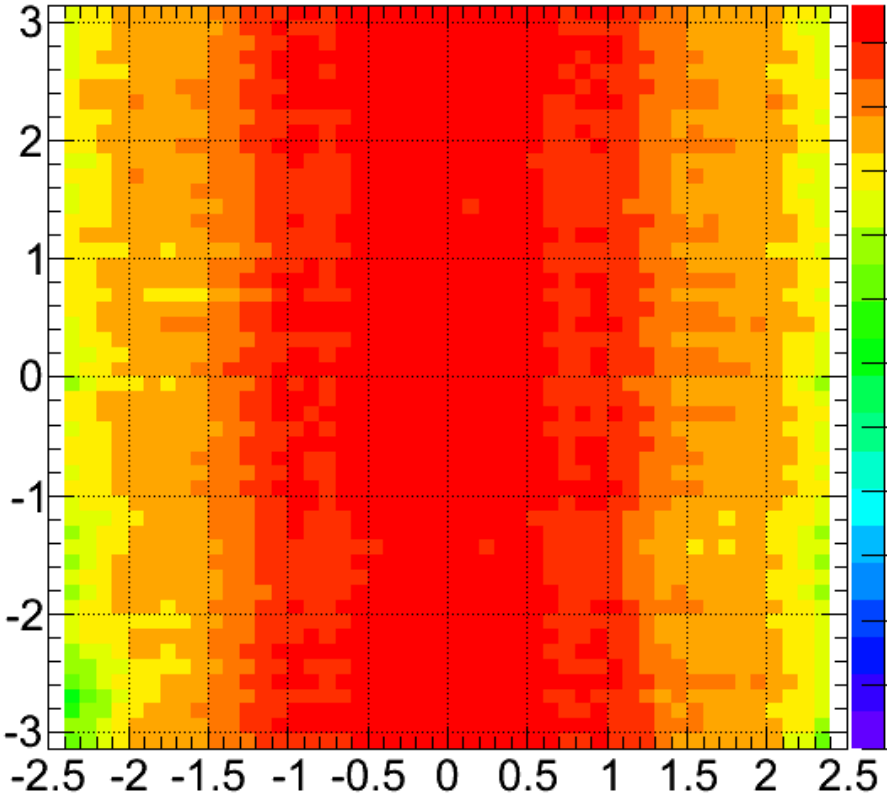




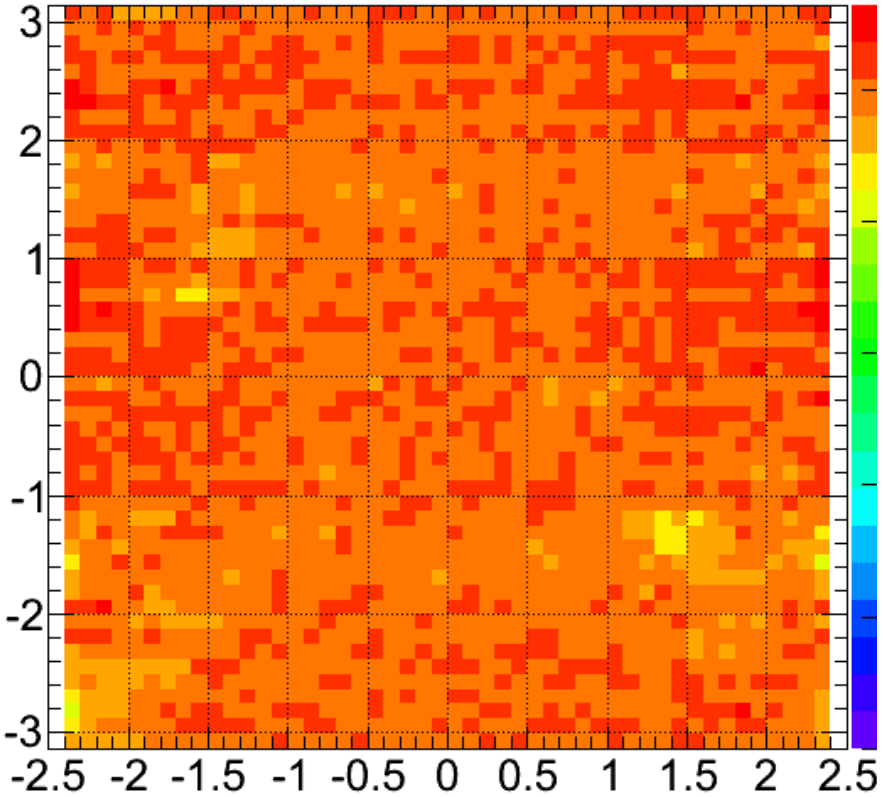
Tracker in Data/MC

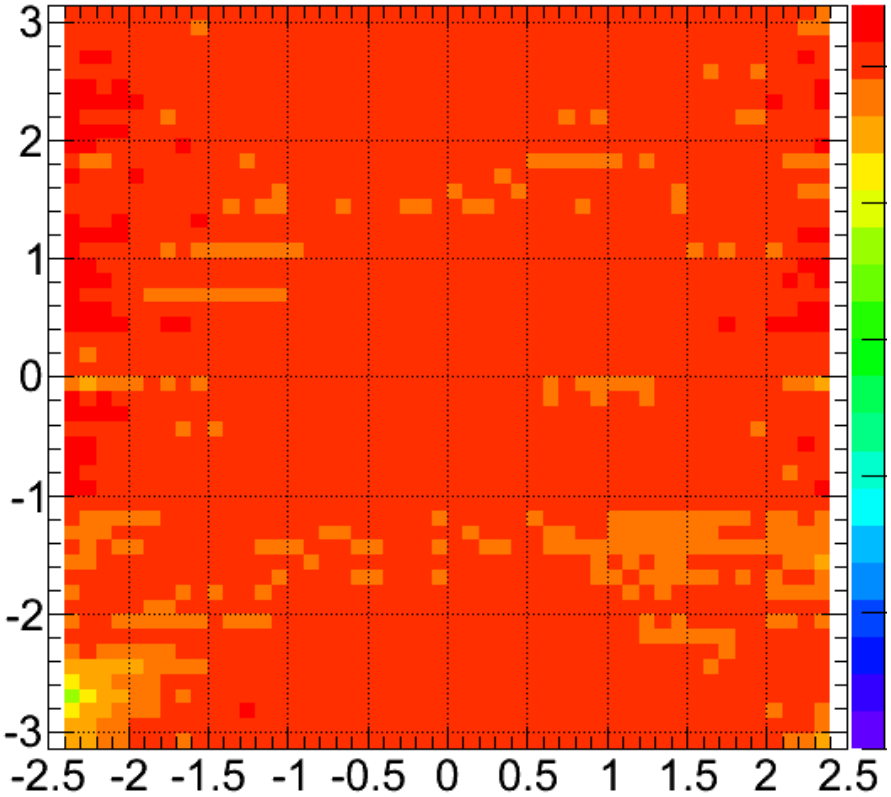
- eta-phi plot of tracks above 0.5 GeV
- Left - Data; Right - MC



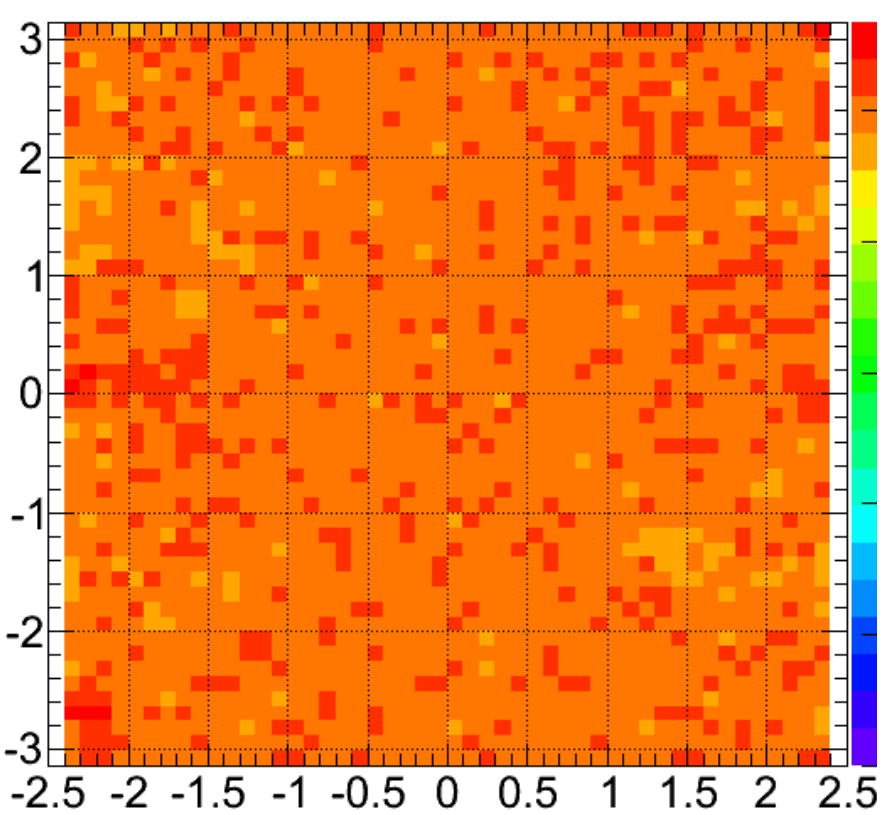


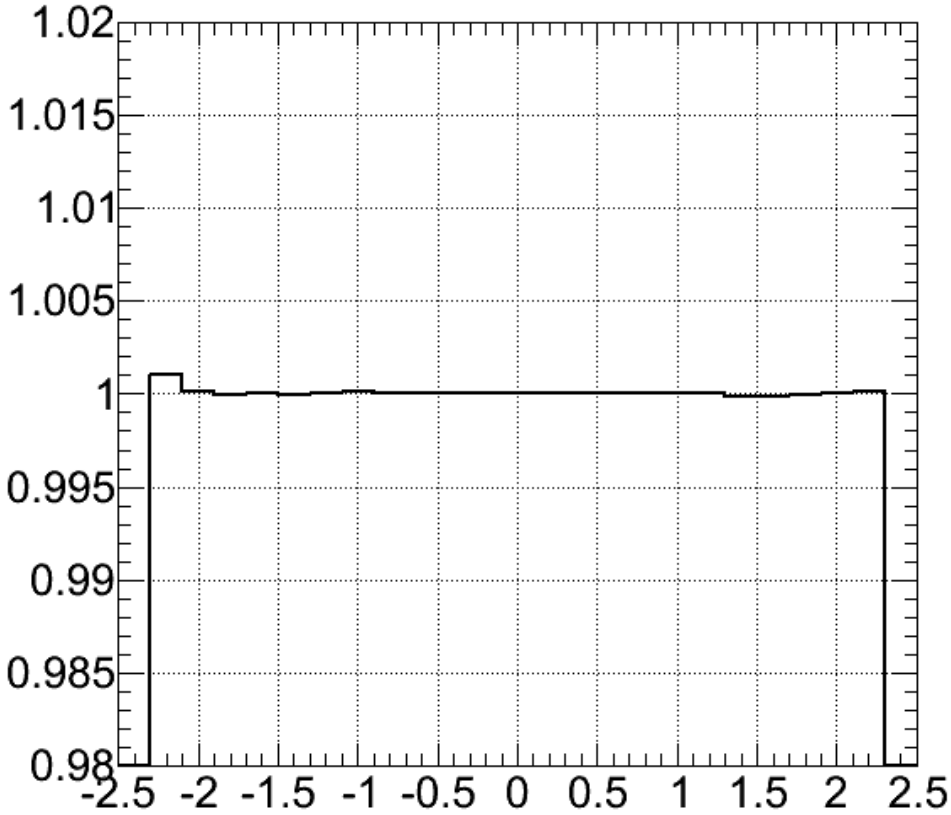
- Normalized in phi
- Left - Data; Right - MC





- Data/MC - left. Profile - right

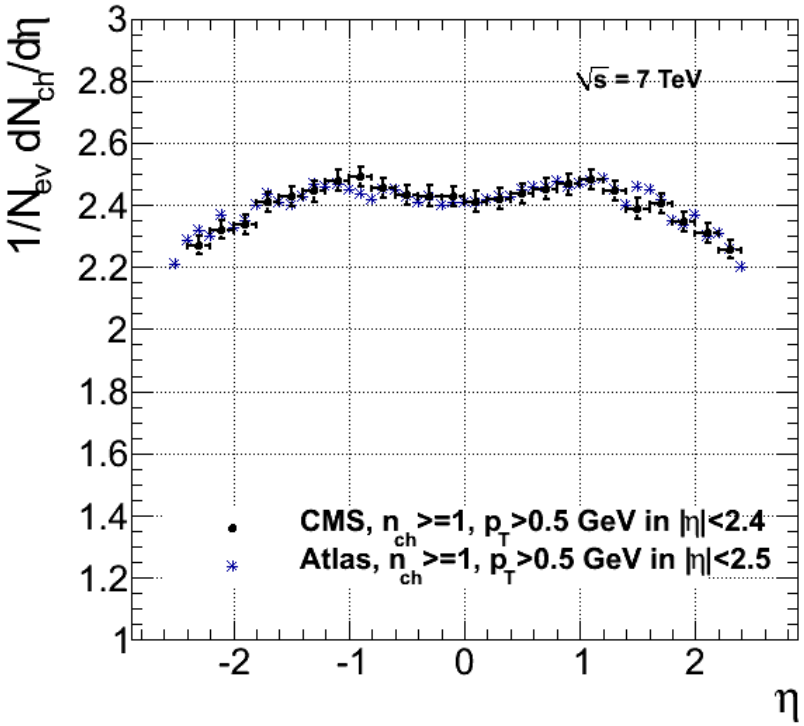


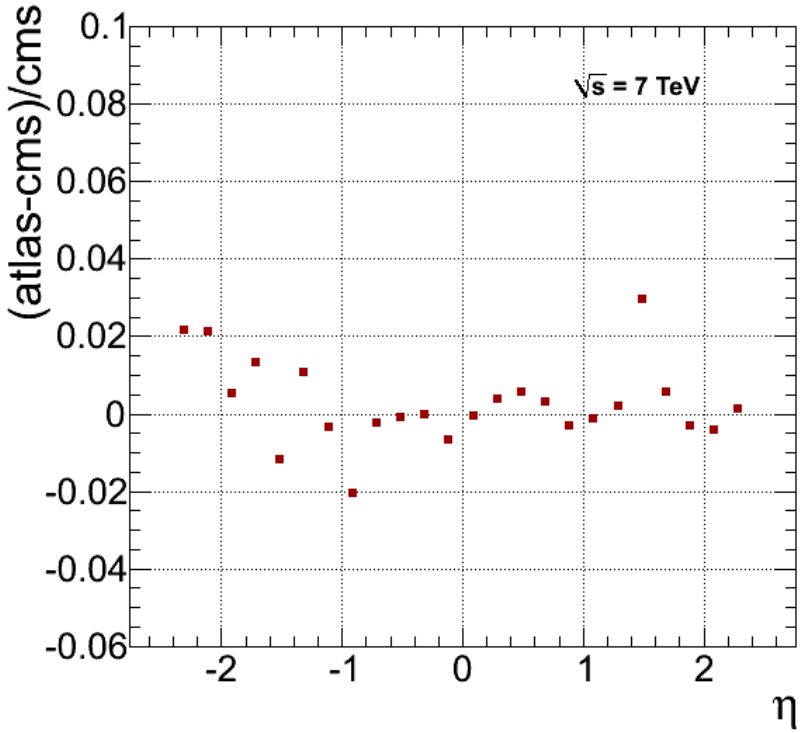


Conclusion

- We cannot recover those low points in data using this aproach

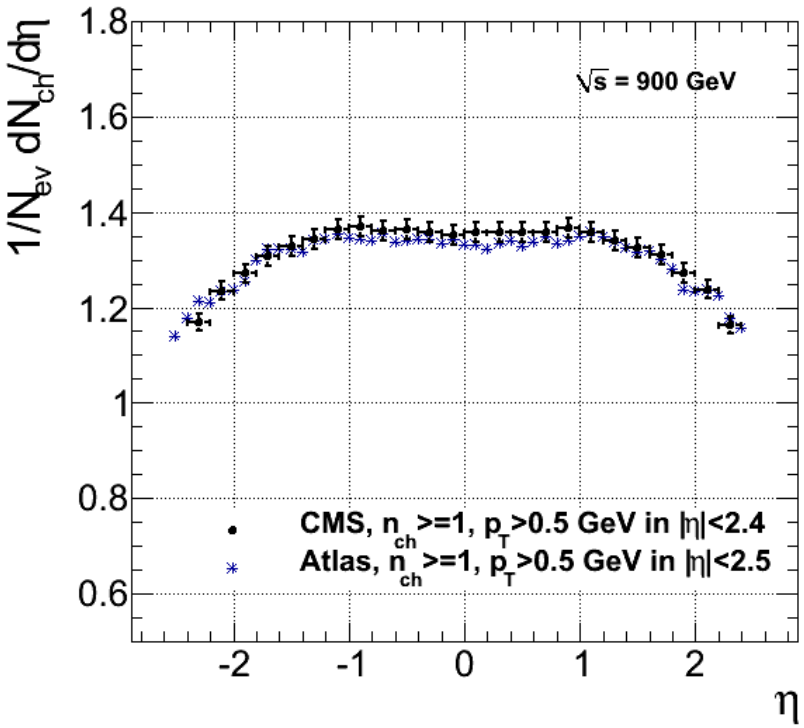
Atlas vs CMS, 7TeV

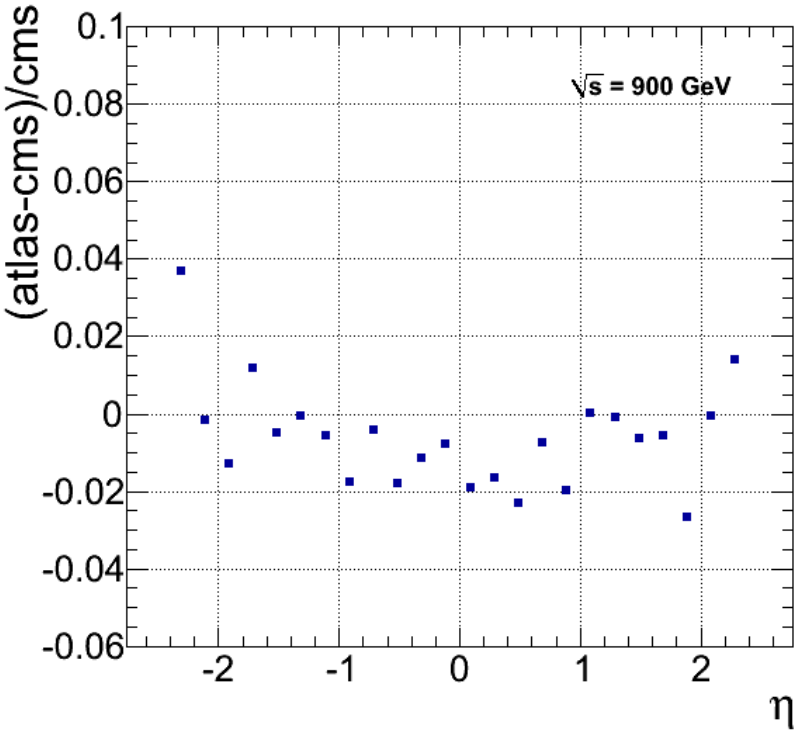




- 1

Atlas vs CMS, 0.9 TeV





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