

Recent Update

- QC plotting for high IR data
- Non-uniform Acceptance Check

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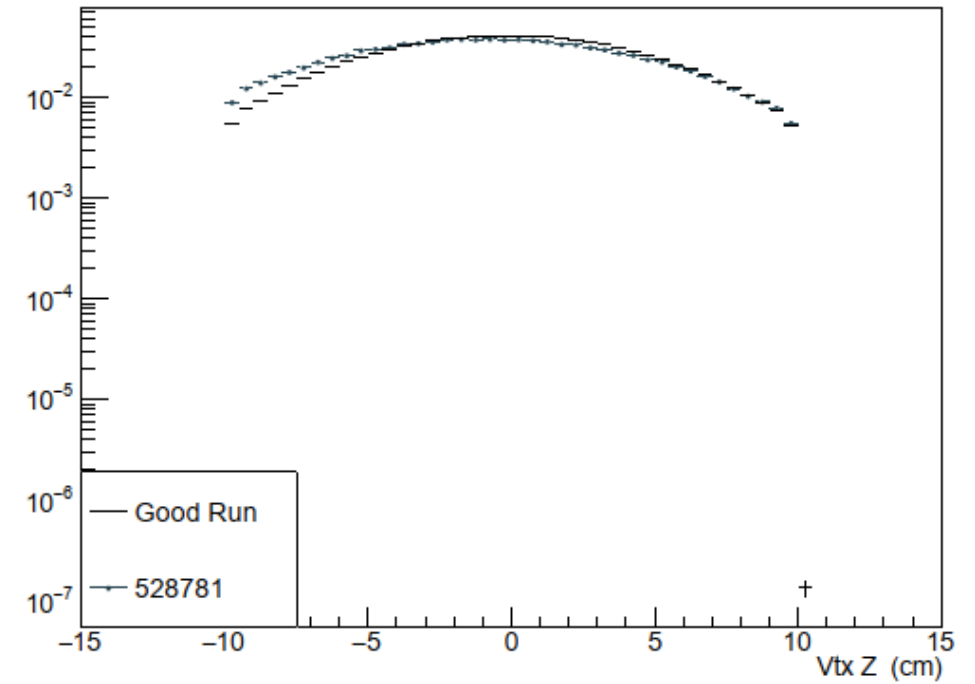
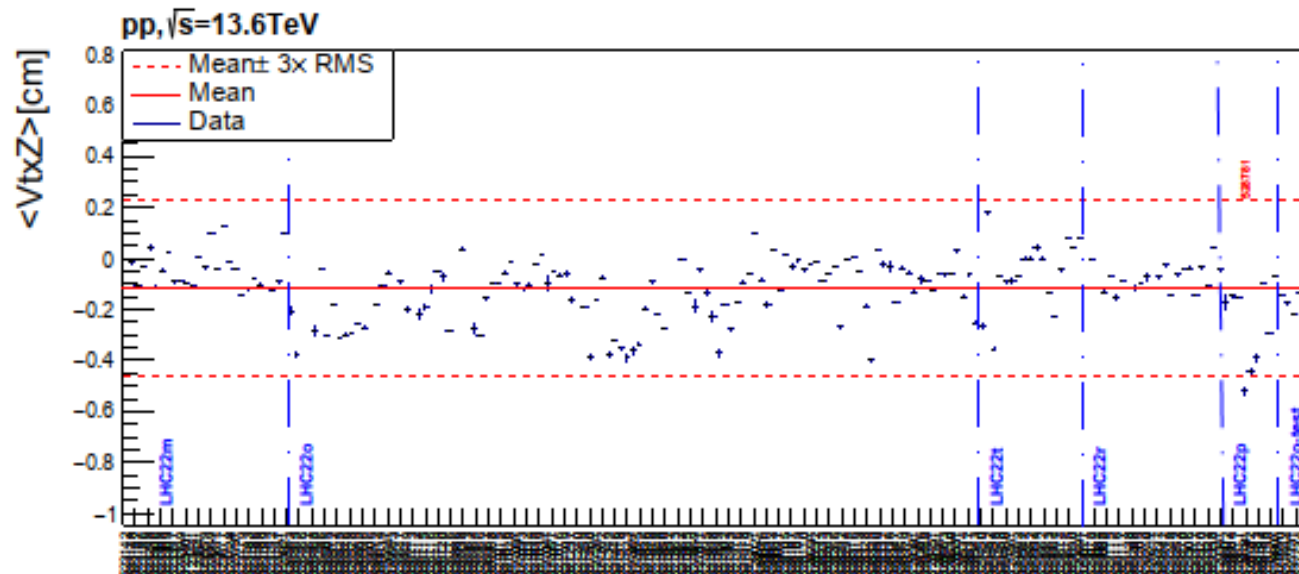
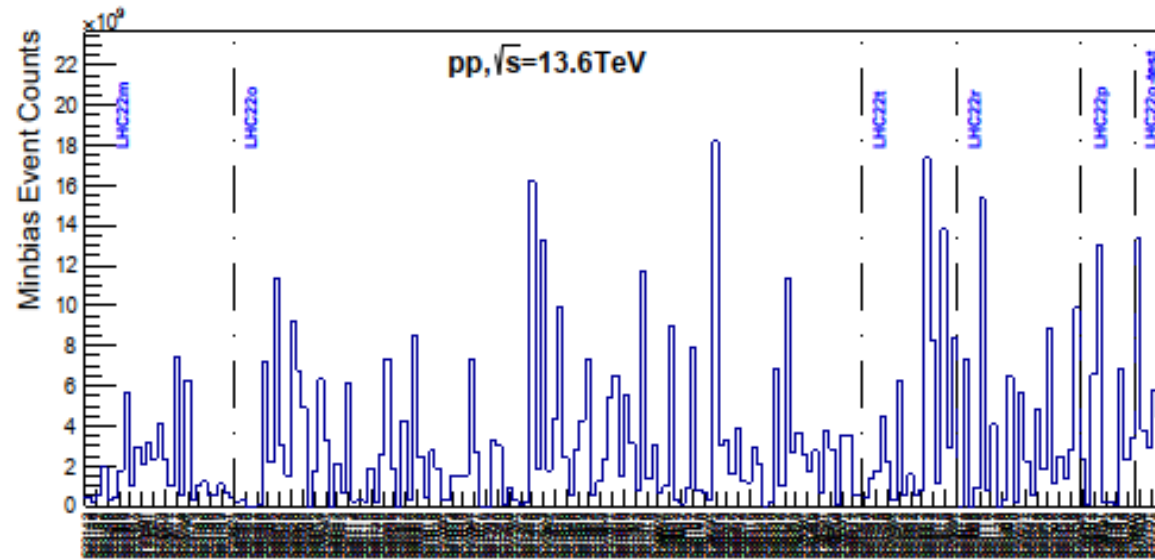
Jan. 2, 24

Analysis Cuts

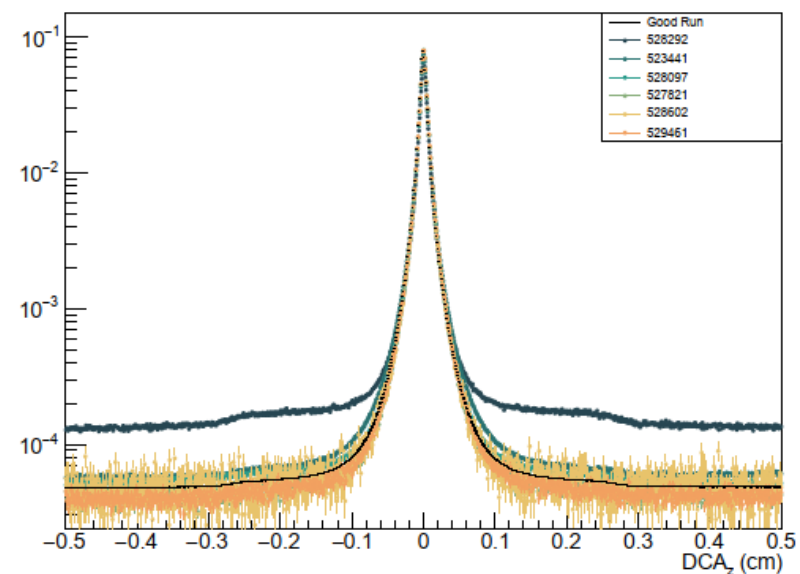
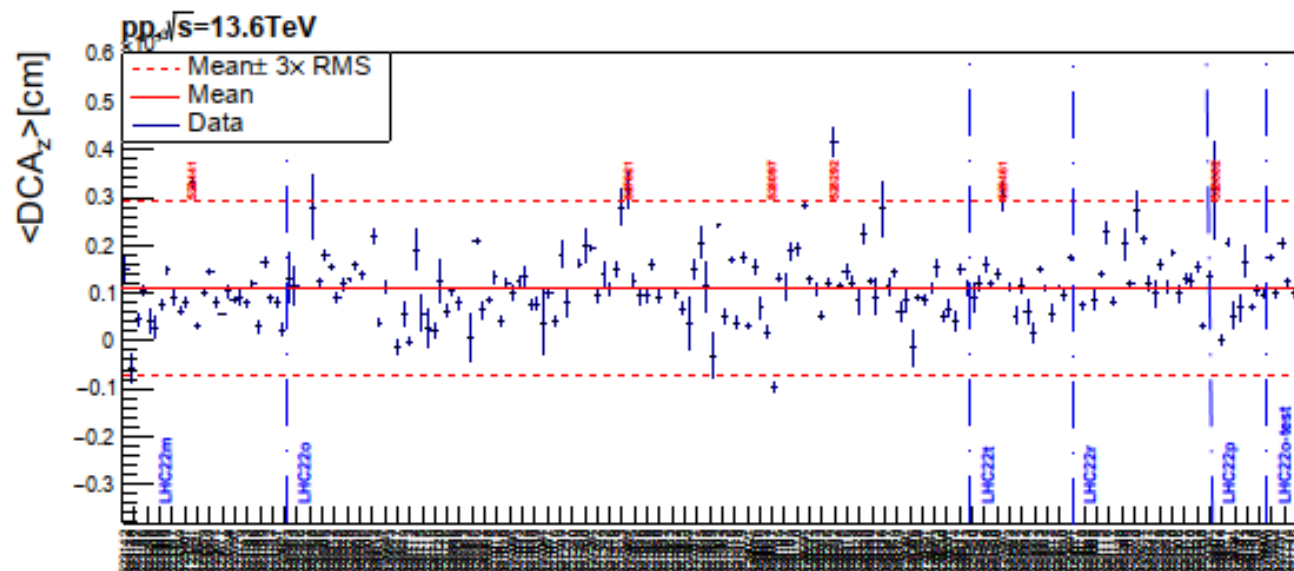
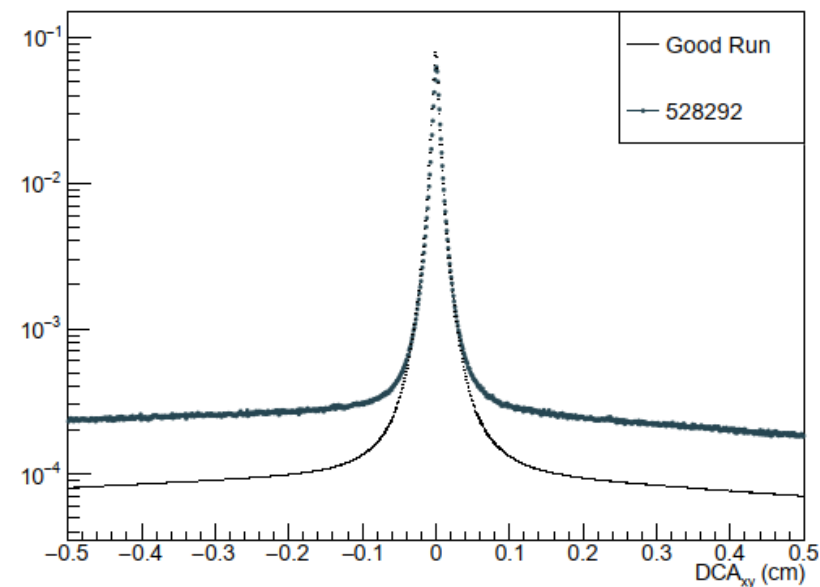
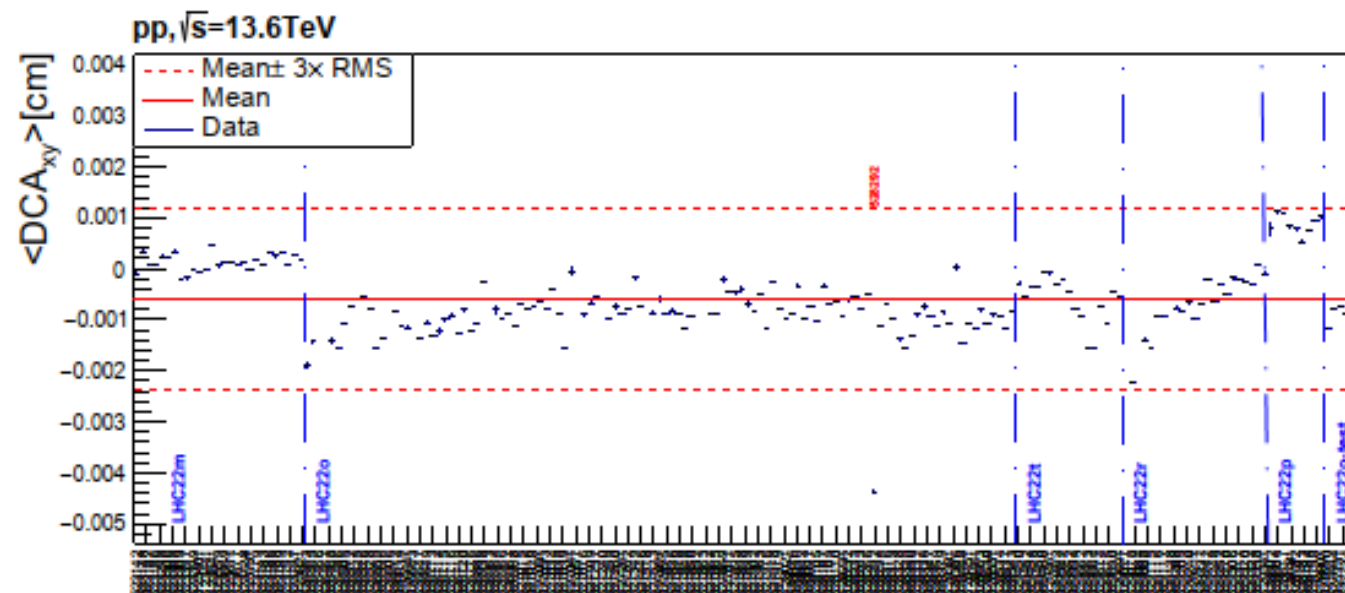
- Run Period:
 - LHC22m_pass4
 - LHC22o_pass4
 - LHC22t_pass4
 - LHC22r_pass4
 - LHC22p_pass4
 - LHC22o_test_pass4
- Cuts for skimmed tree creation
 - Event Cut: $|Vtx_z| < 10cm$
 - Track Cut:
 - $|\eta| < 0.9$
 - $p_T > 0.1GeV$
 - ITS Matching
- Analysis Cut For J/ψ
 - $\chi_{TPC}^2 < 4$
 - $2 < ncls_{ITS}$
 - $90 < ncls_{TPC}$
 - $-3 < n\sigma_{elec}^{TPC} < 3$
 - $n\sigma_{\pi}^{TPC} > 3$
 - $n\sigma_{proton}^{TPC} > 3$
- Track Cut For Reference Particle
 - $\chi_{TPC}^2 < 4$
 - $ncls_{TPC} > 90$
 - $ncls_{ITS} > 2$
 - $isSPDAny$
 - $-1cm < DCA_{xy} < 1cm$
 - $-3cm < DCA_z < 3cm$
 - $0.2 < p_T < 3GeV/c$

From analysis note of
Phys. Rev. Lett. **123**, 142301

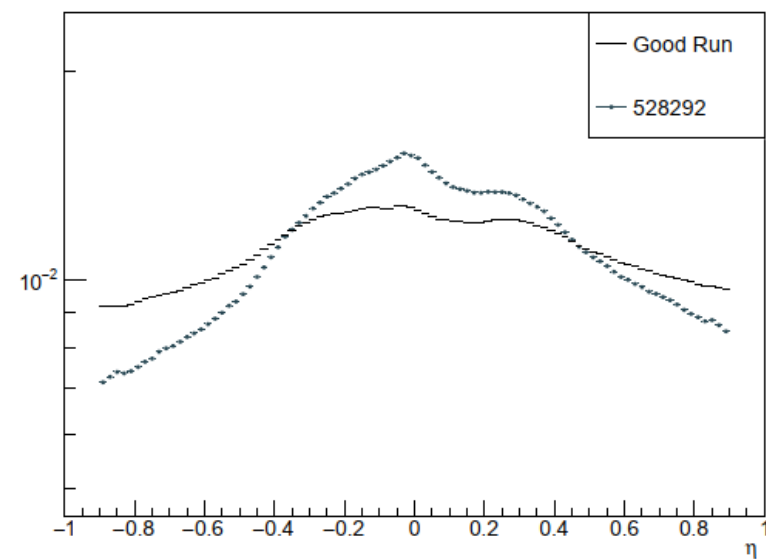
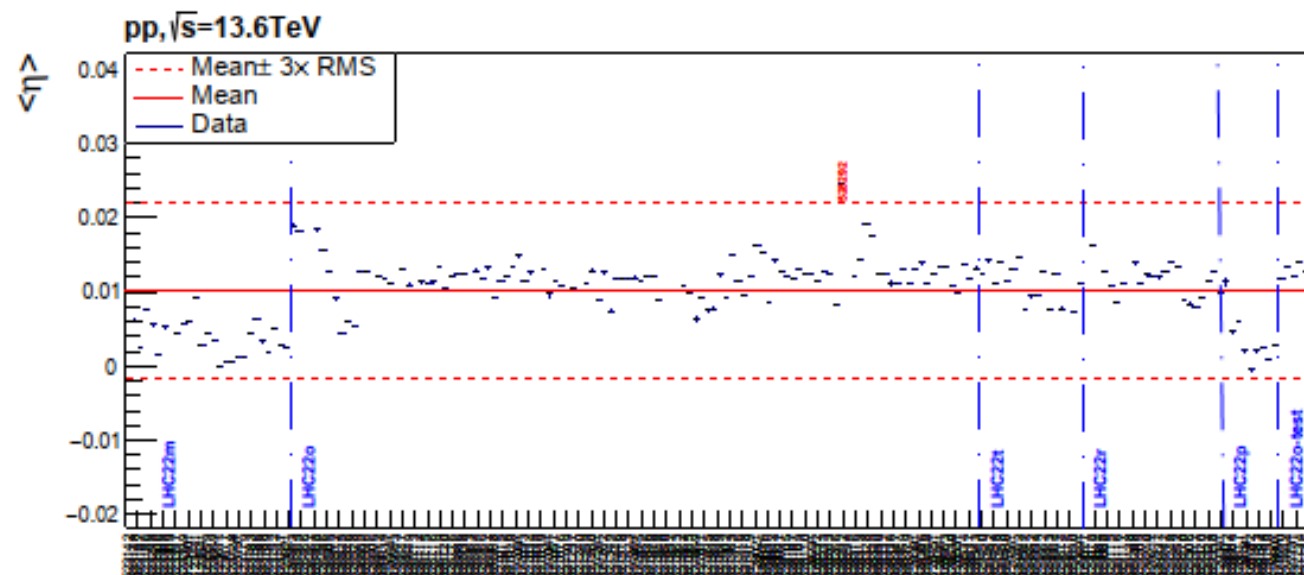
Event Information



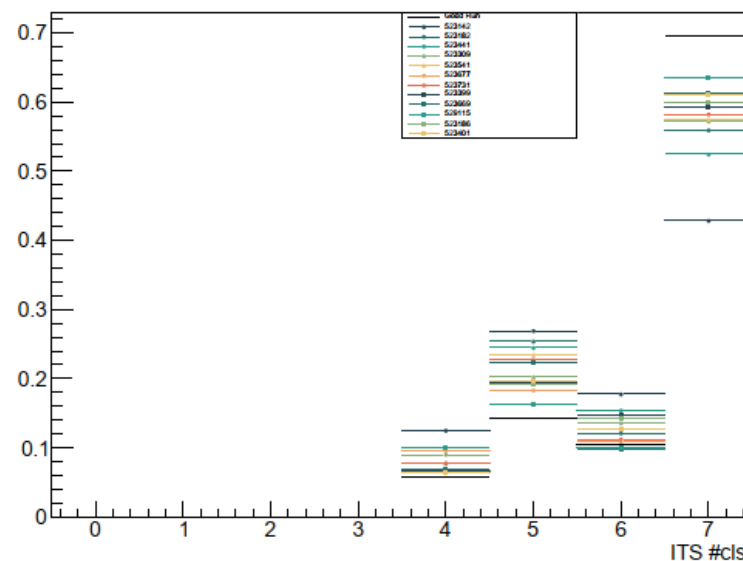
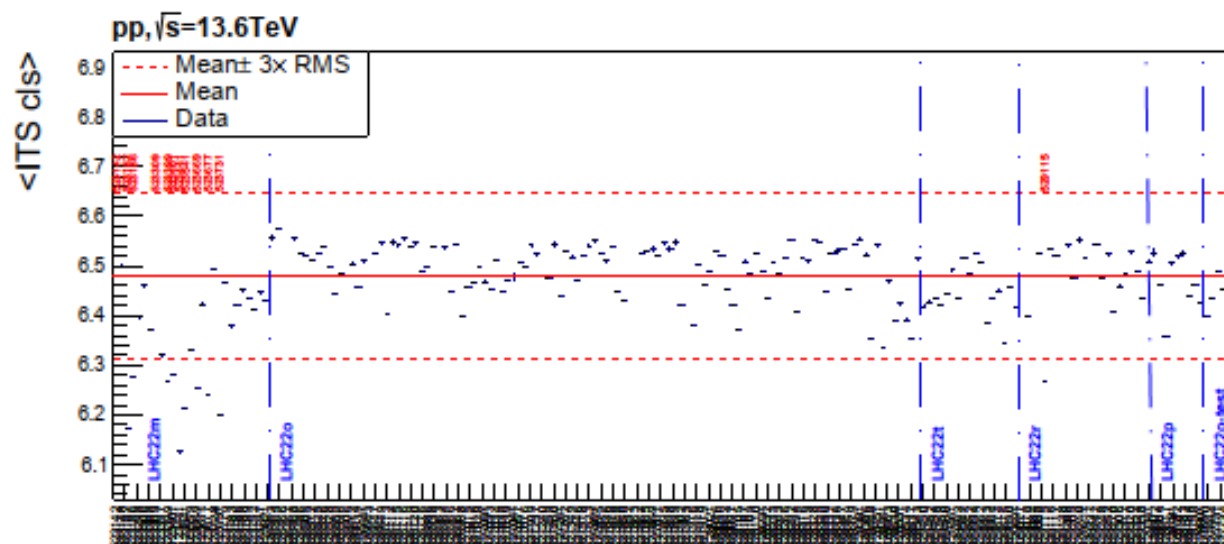
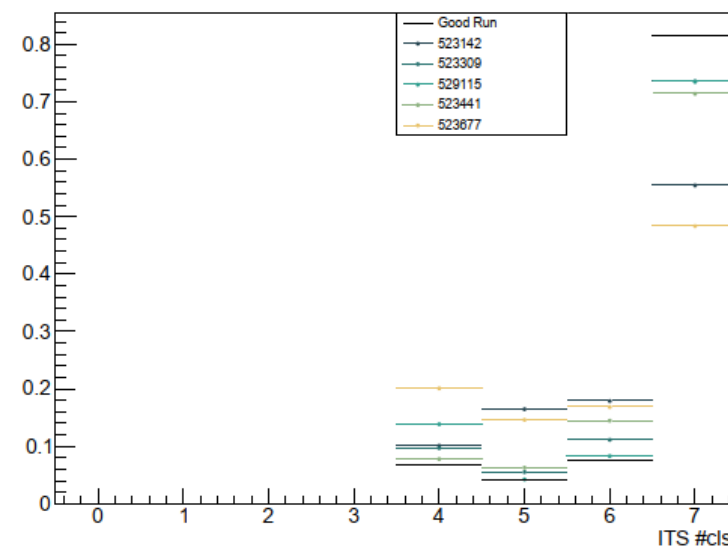
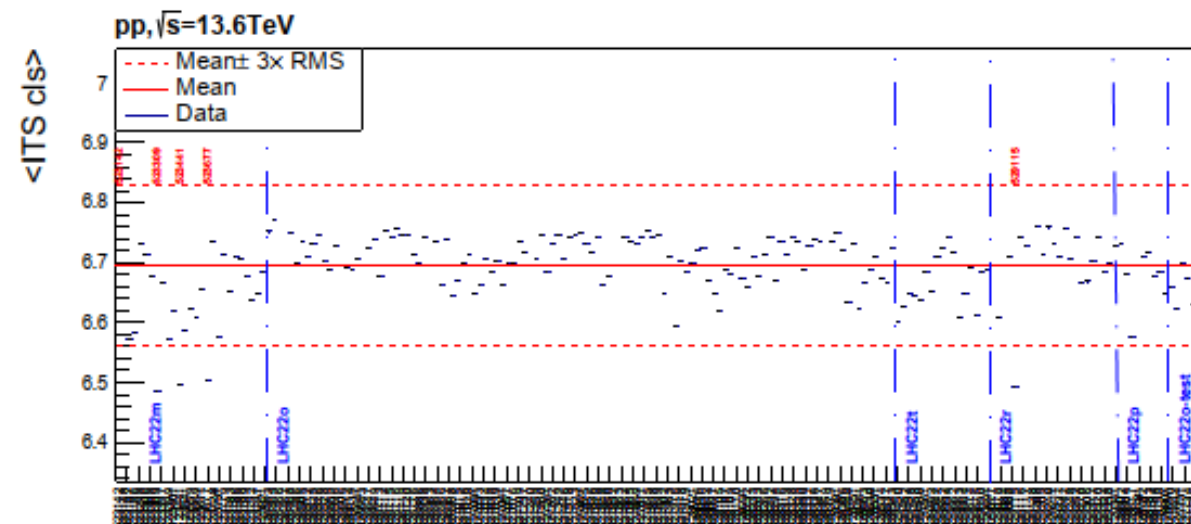
QC for DCA(Before Cuts)



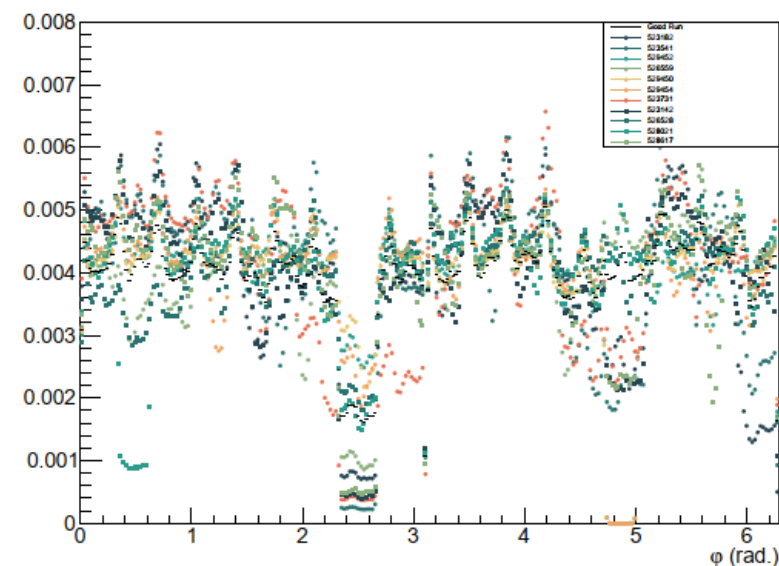
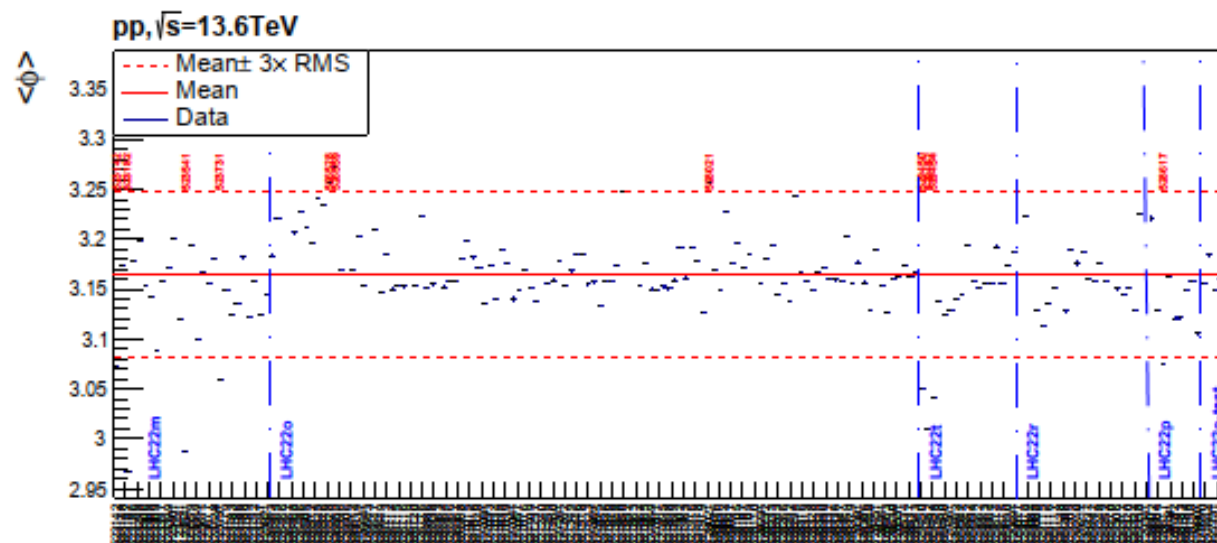
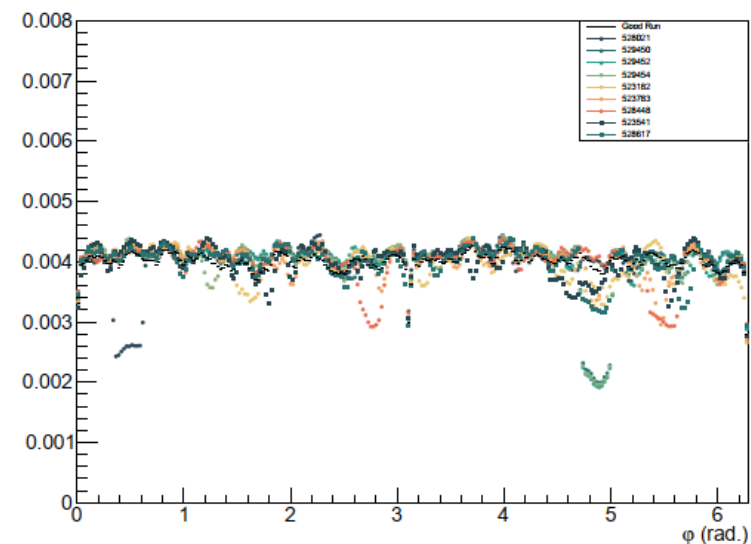
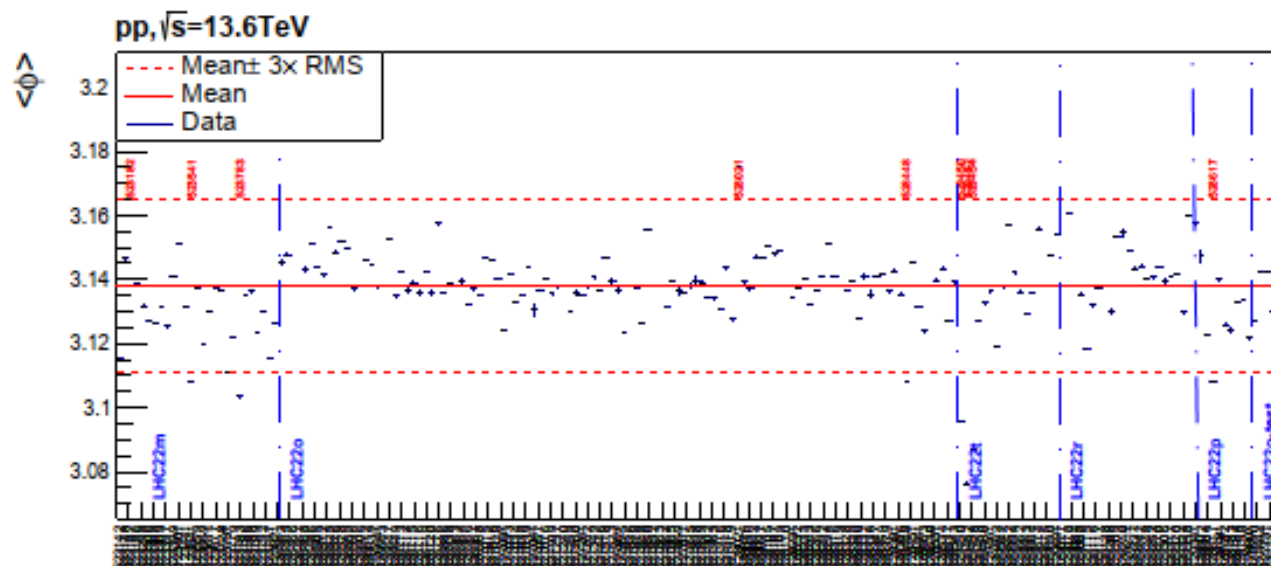
QC for η (Before Cuts)



QC for ITSncIs(Reference Cut and J/ψ Cut)



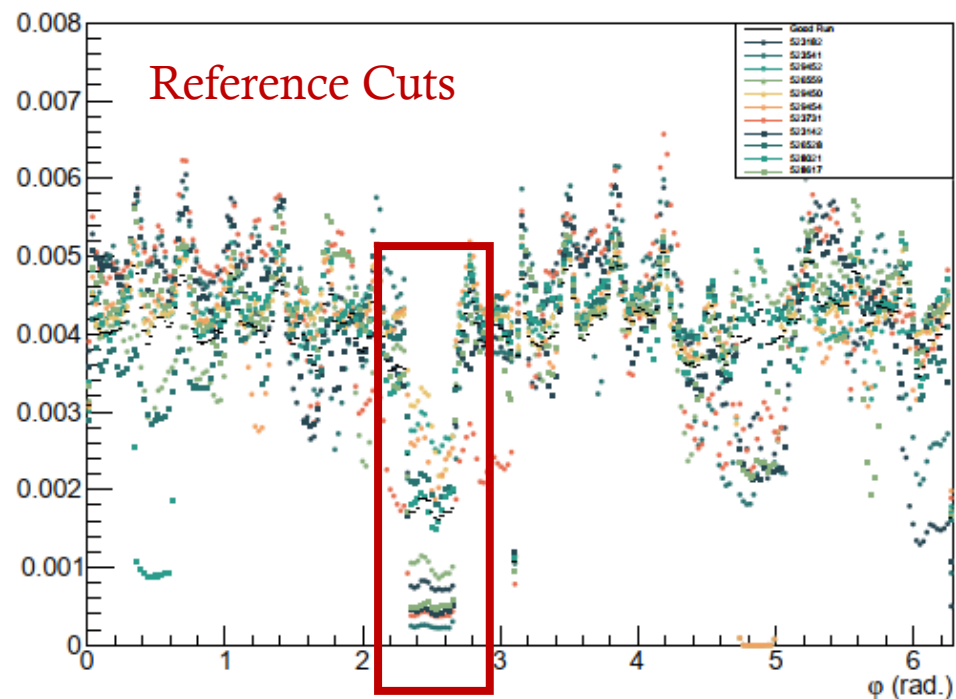
QC for ϕ (Before Cut and Reference Cut)



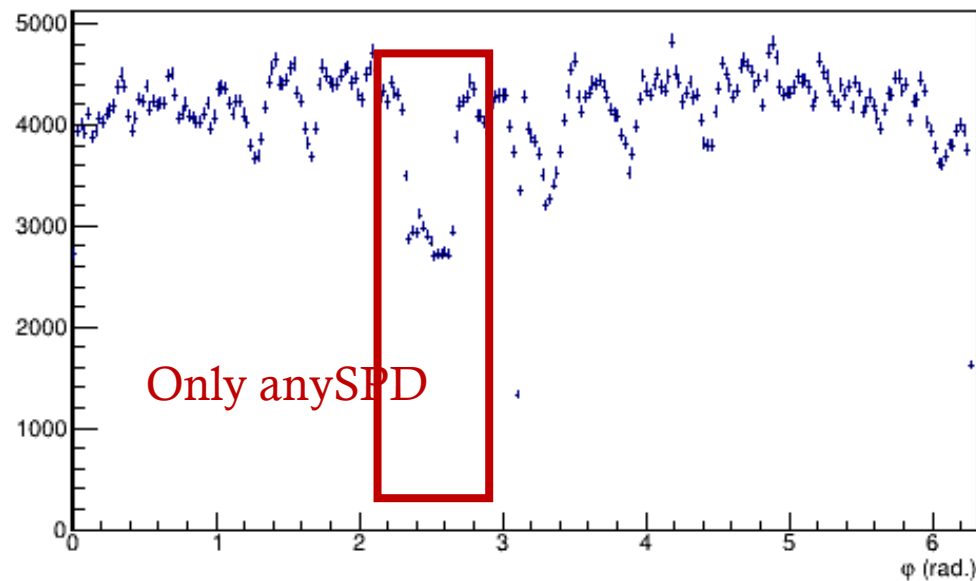
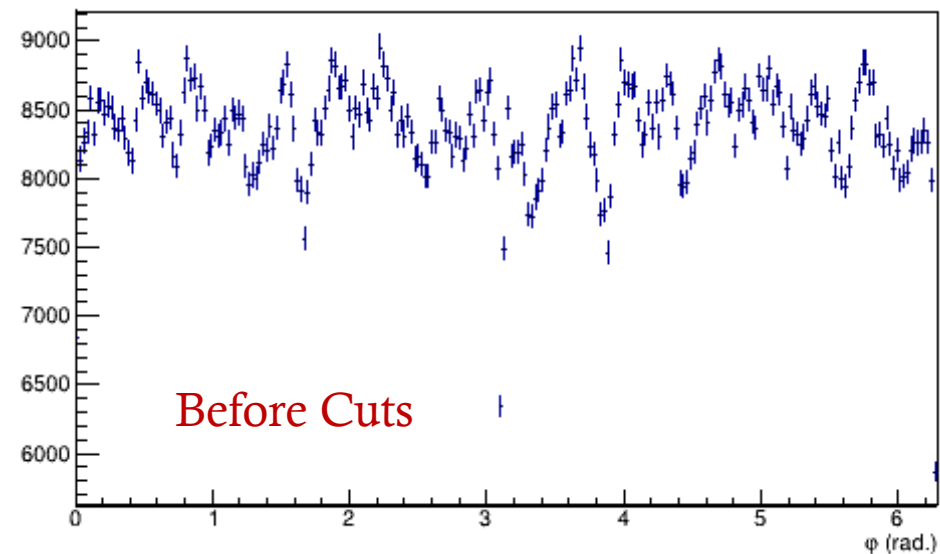
QC Conclusion

- Bad Run: 528292,523142,523677,523411
- Non-uniform Acceptance should be checked.

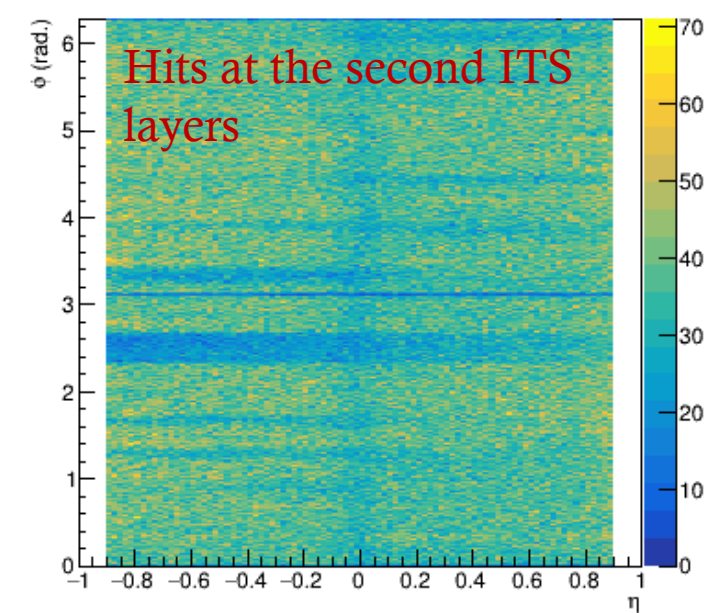
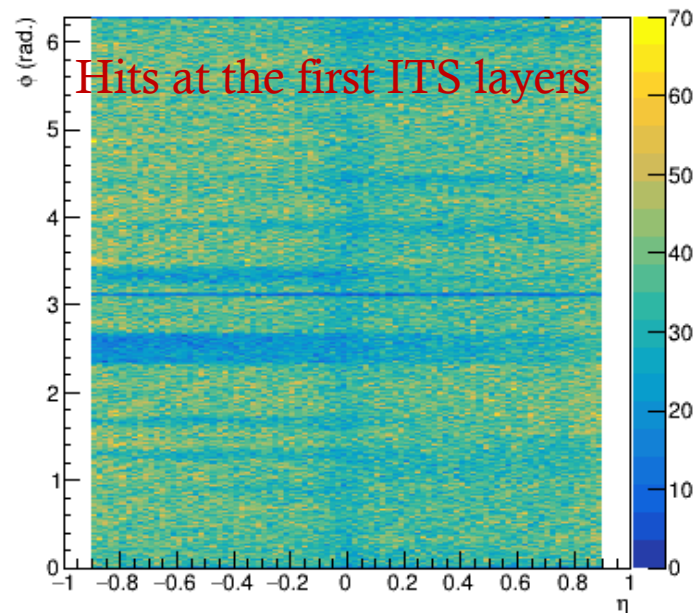
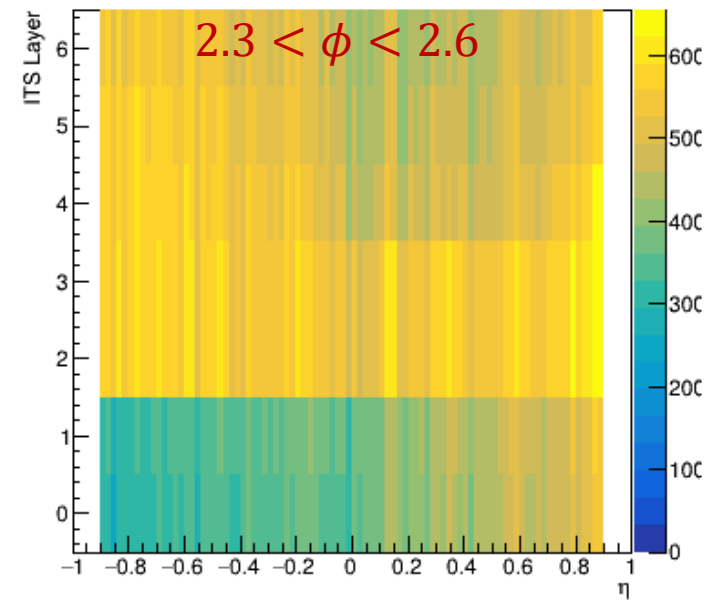
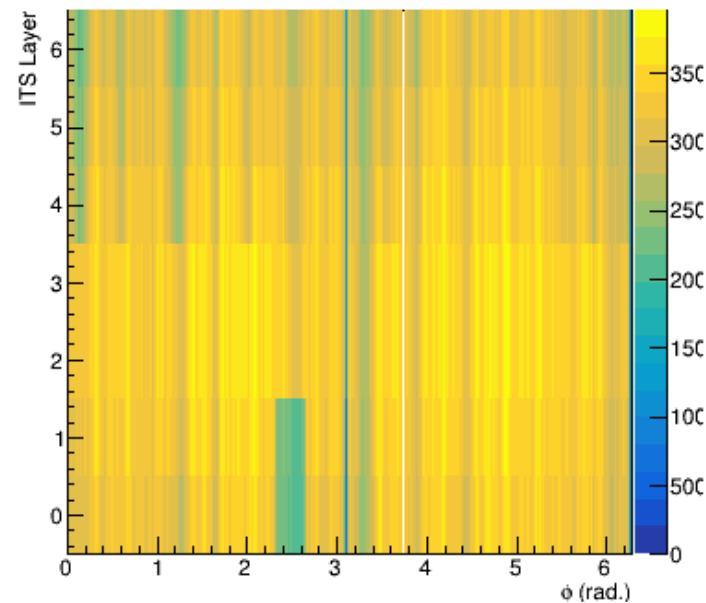
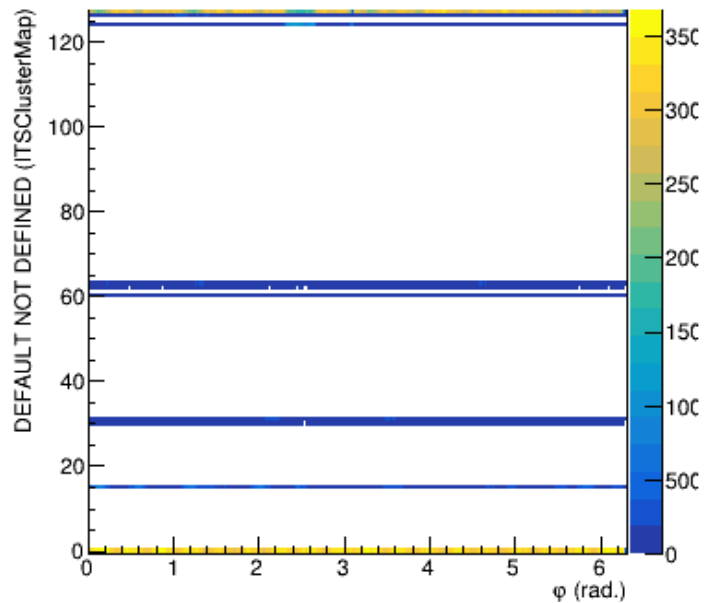
Non-uniform Acceptance Check



- isSPDany cut losses a lot of efficiency at ϕ in the red box



Detail Check Before Cuts



No acceptance is lost but the efficiencies are low at specific $\eta - \phi$ region for SPD.

Conclusion

- Remove the isSPDany cut for reference flow but keep it for J/ψ reconstruction