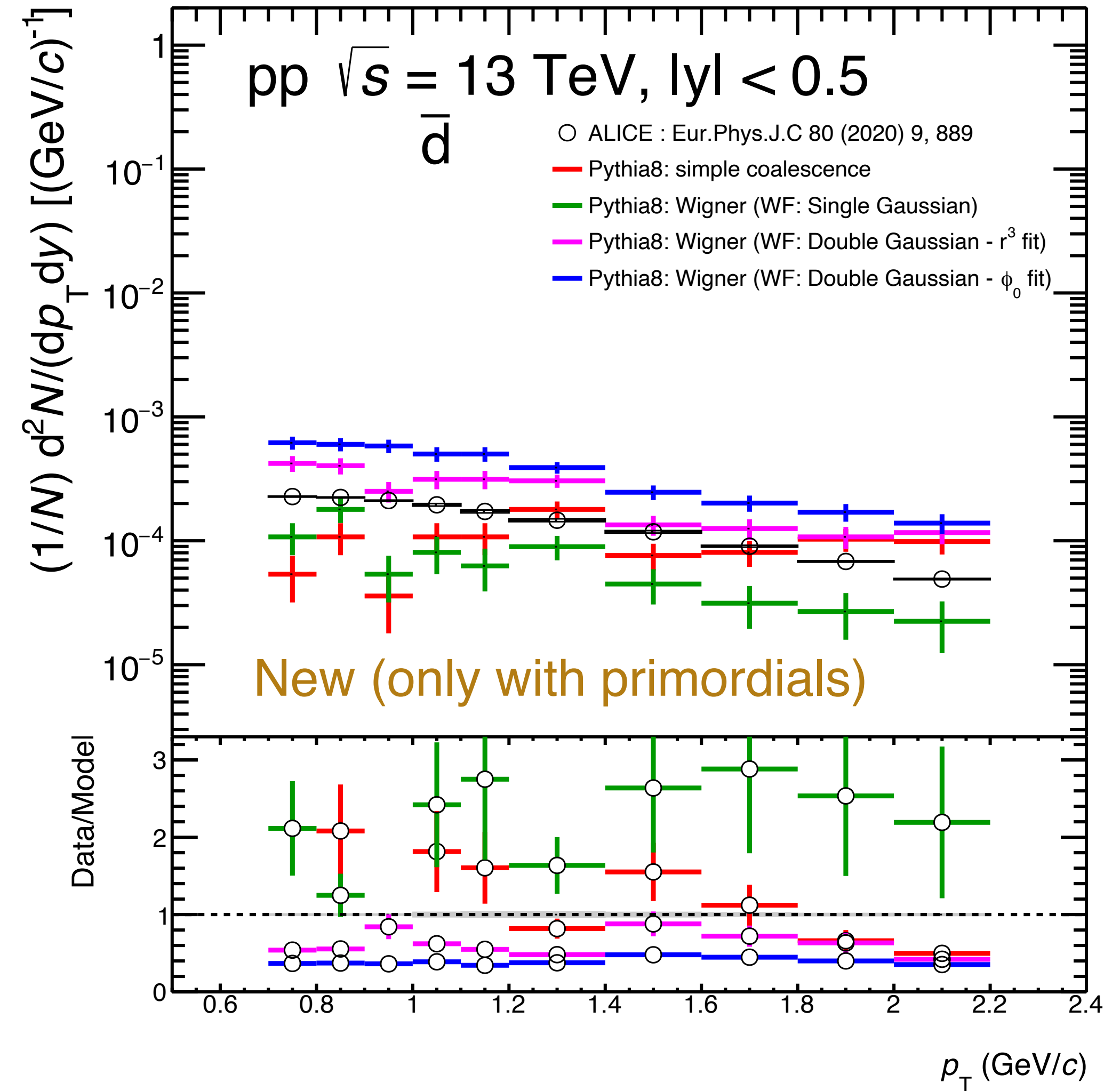
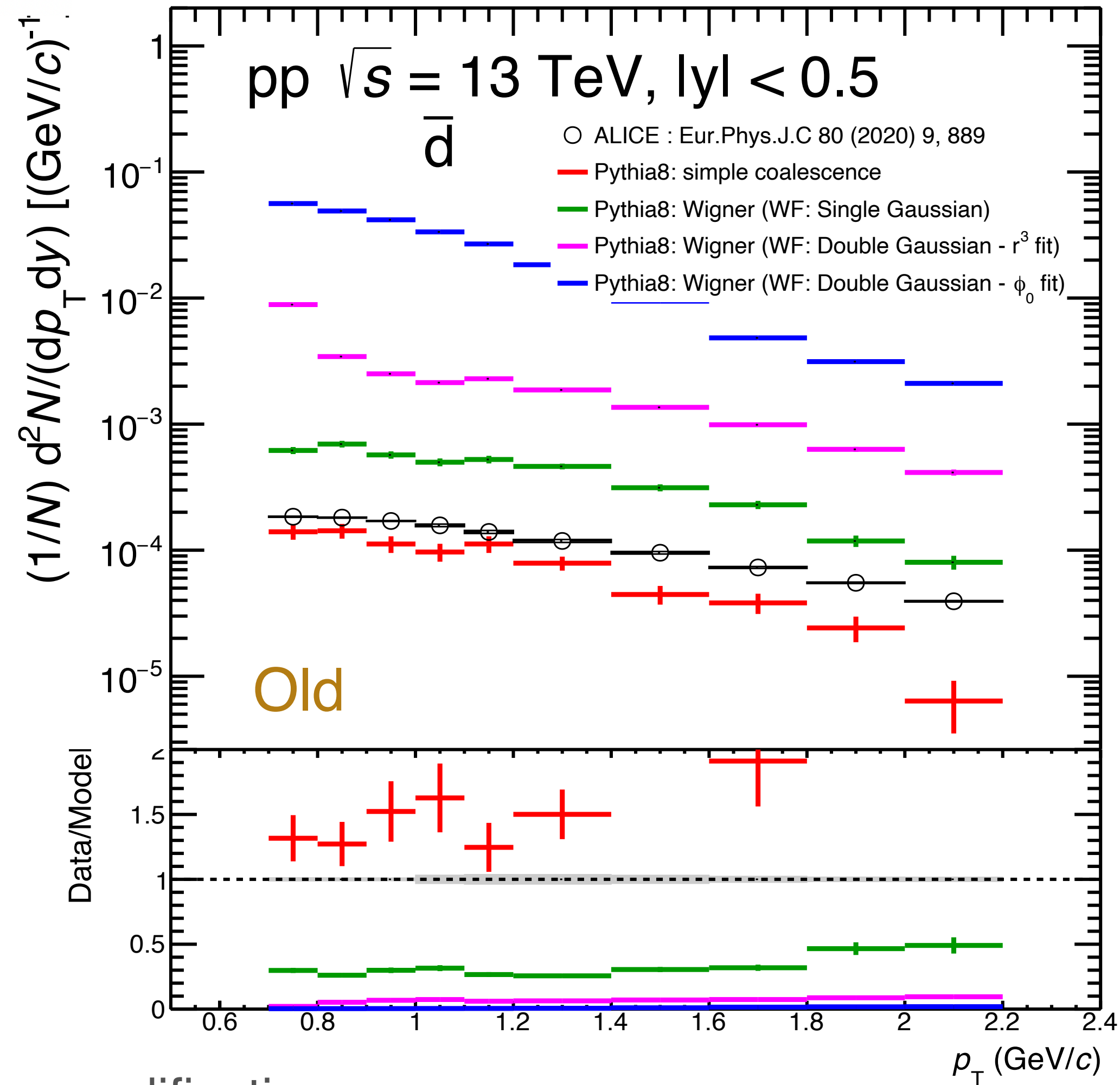




Comparison of deuterons

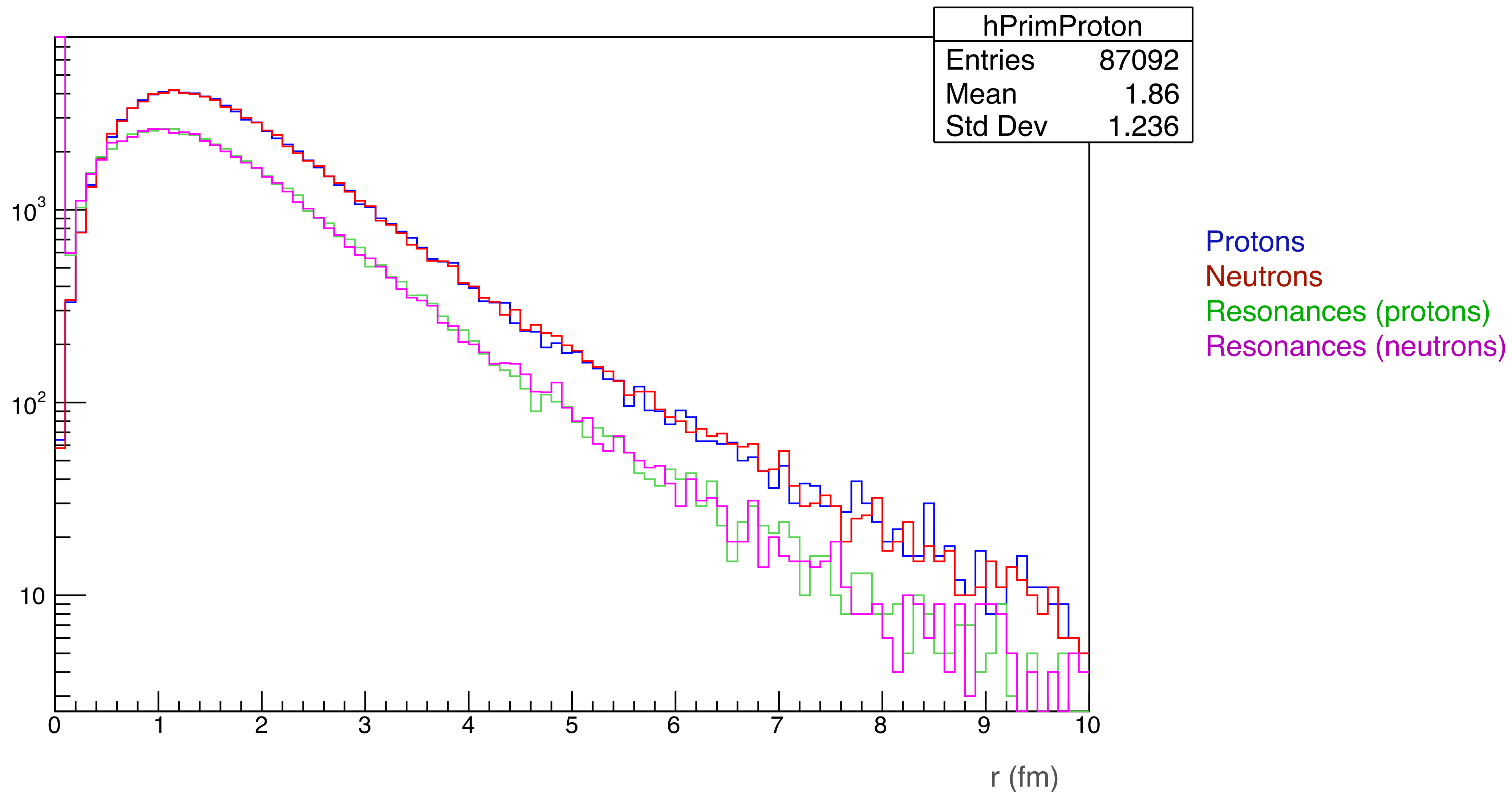


- New modifications:
 - We have the correct vertex information from Pythia now (earlier it was set to 0 by default)
 - The plot is obtained only with primordials and treatment for resonances ongoing!



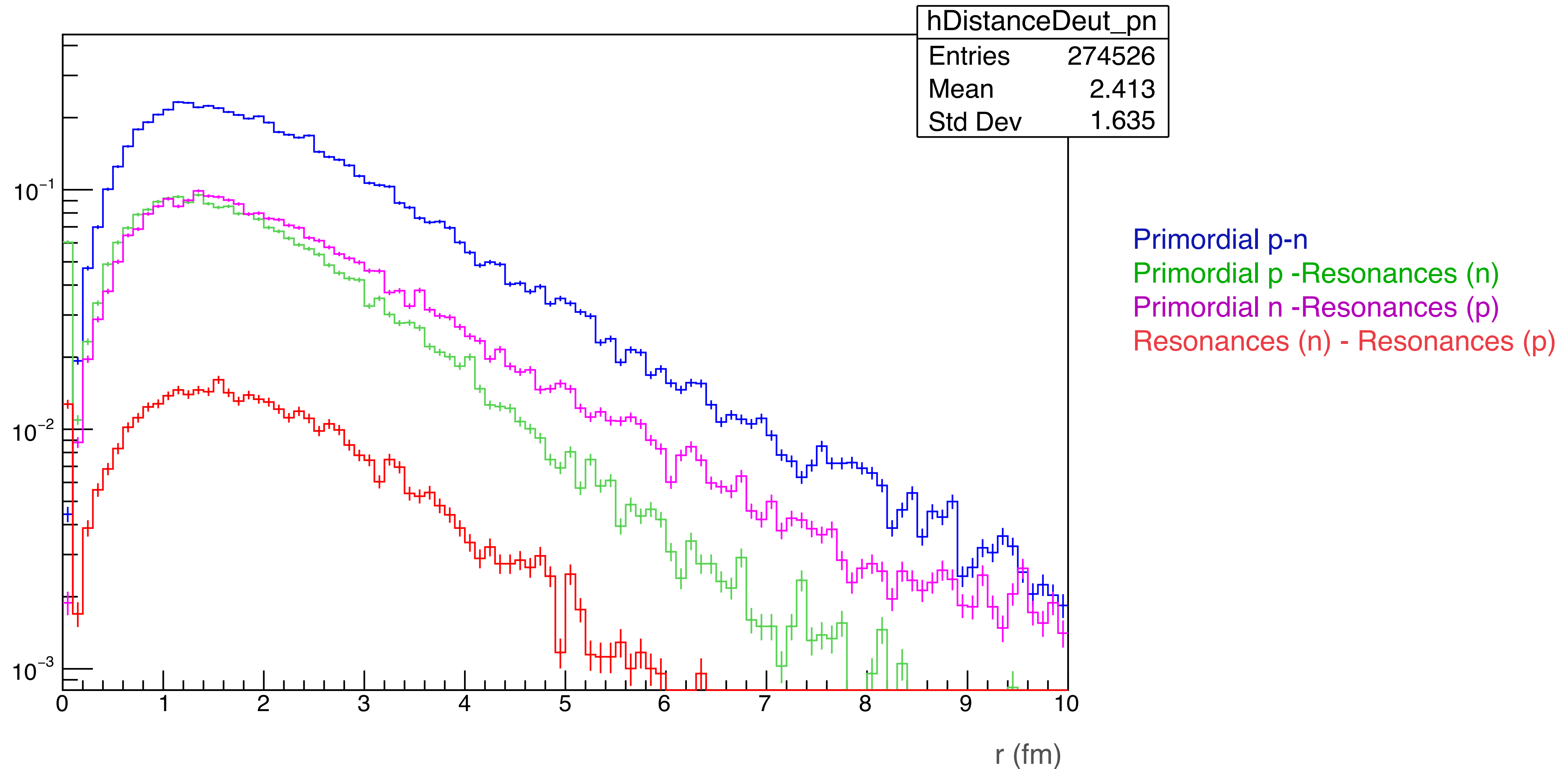
Radial distributions (13 TeV)

hPrimProton



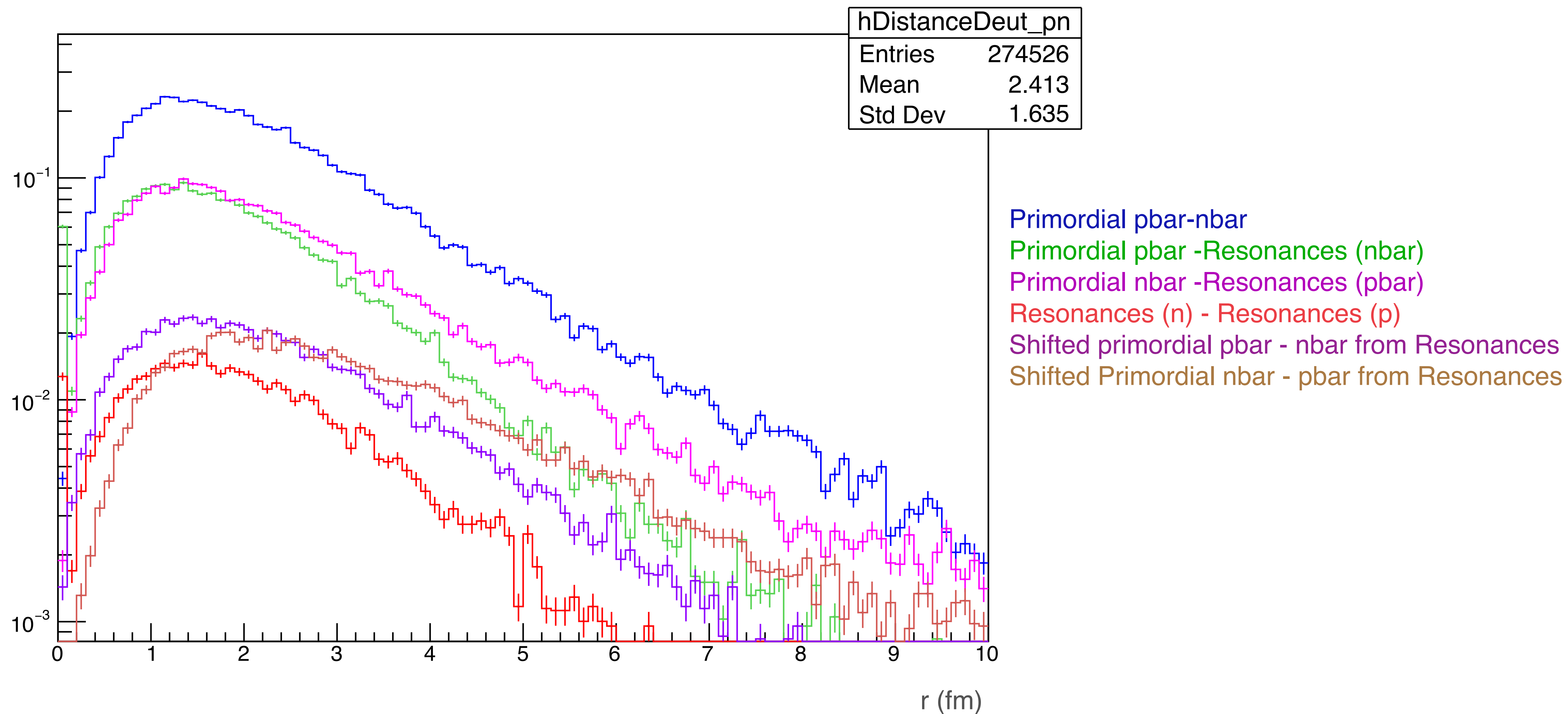


Radial distributions - pair rest frame



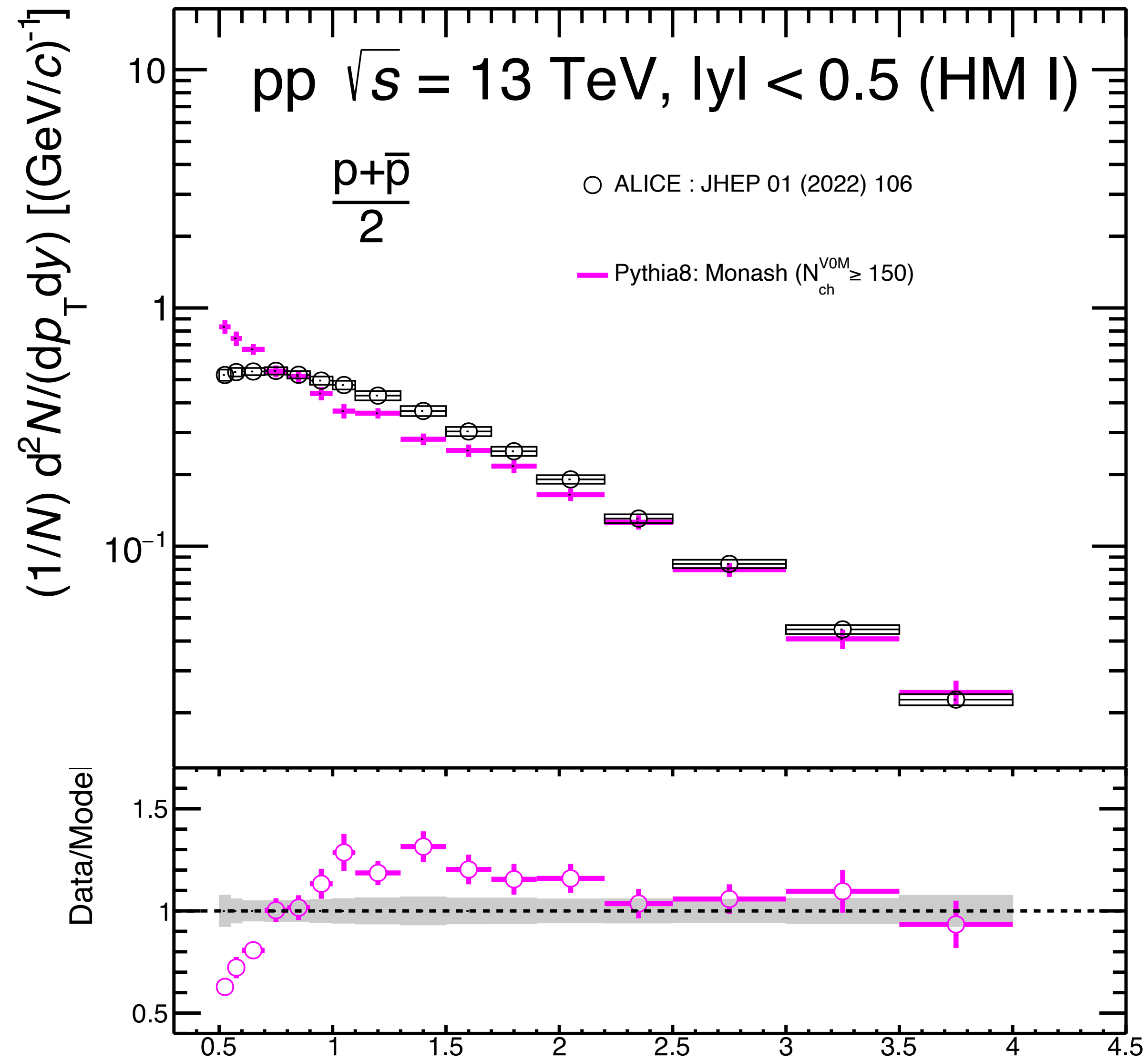


Radial distributions - pair rest frame



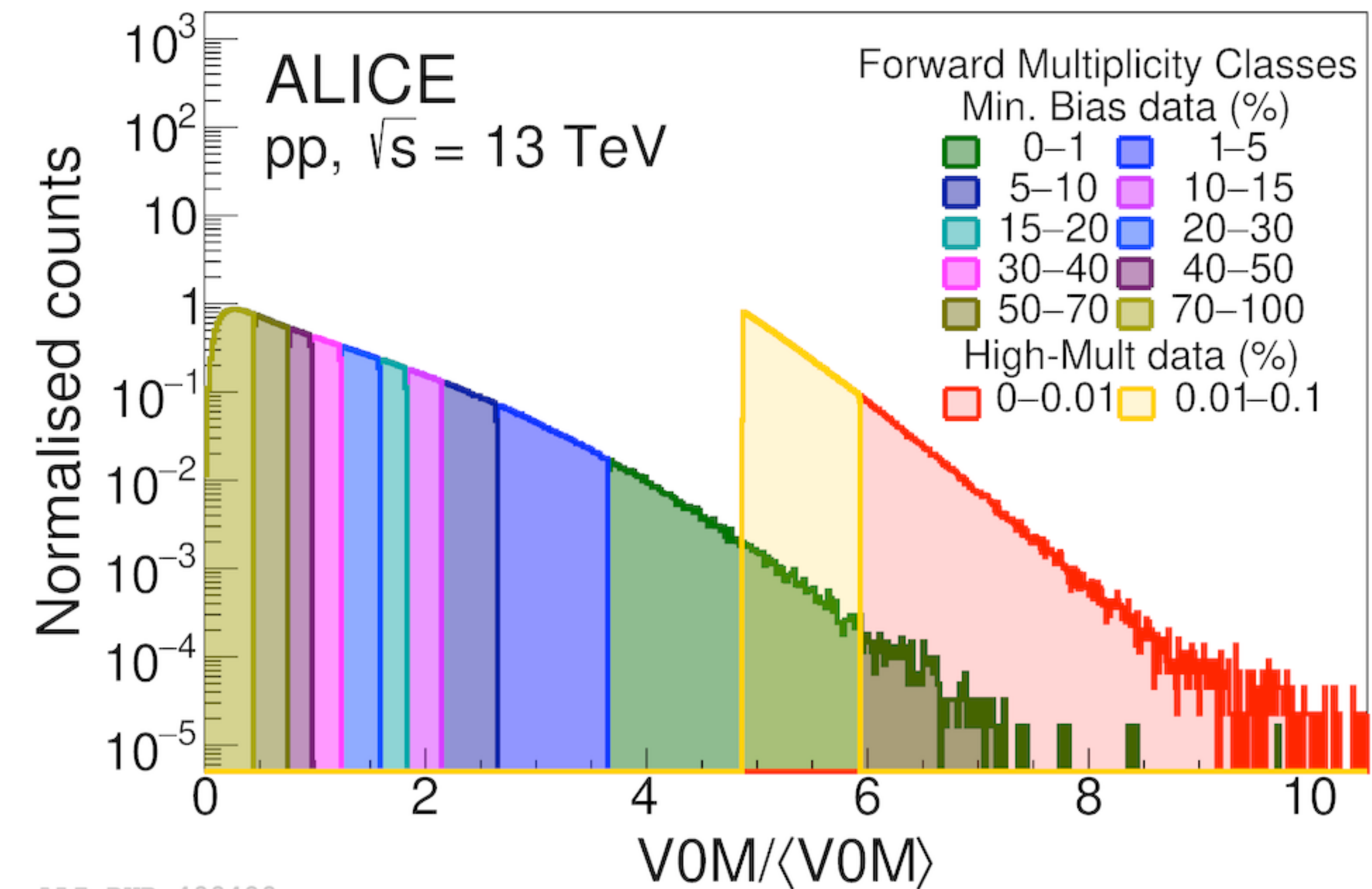


Proton Comparison (HM I)





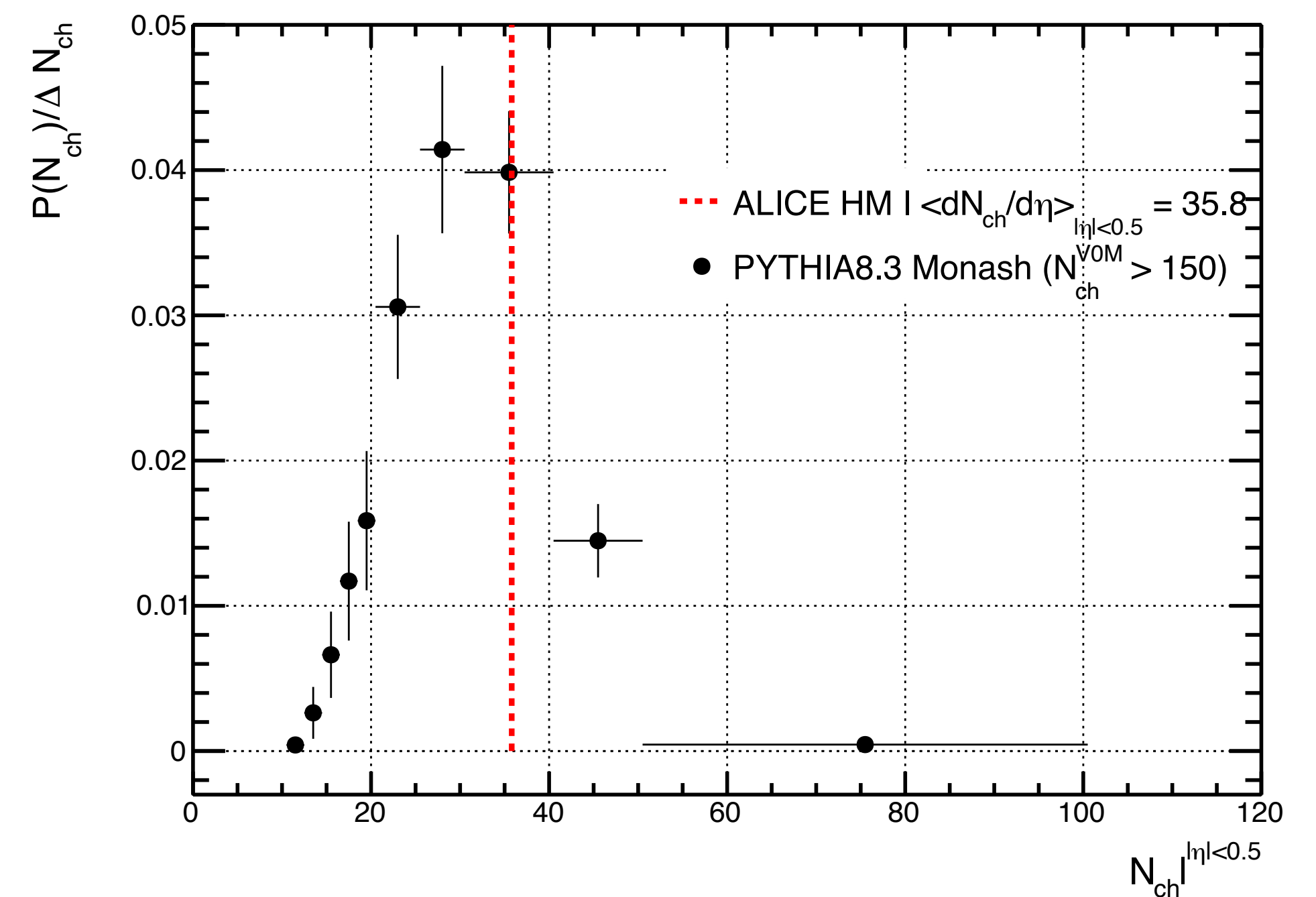
HM trigger mult. distribution



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$\Delta\sigma / \sigma_{\text{MB AND} \geq 0}$	Forward Multiplicity Estimator		
	$\sqrt{s}$ (TeV)		
	5.02	7	13
	$\langle dN_{\text{ch}}/d\eta \rangle \pm \text{uncorrelated systematic uncert}$		
0–0.01%	$24.53 \pm 0.23 \pm 0.31$	$29.13 \pm 0.25 \pm 0.44$	$35.82 \pm 0.33 \pm 0.33$
0.01–0.05%	$22.42 \pm 0.21 \pm 0.23$	$26.27 \pm 0.23 \pm 0.30$	$32.21 \pm 0.29 \pm 0.29$
0.05–0.1%	$21.14 \pm 0.20 \pm 0.22$	$24.70 \pm 0.22 \pm 0.25$	$30.13 \pm 0.27 \pm 0.27$
0.01–0.1%	$21.71 \pm 0.20 \pm 0.21$	$25.40 \pm 0.22 \pm 0.26$	$31.05 \pm 0.28 \pm 0.28$





To do...

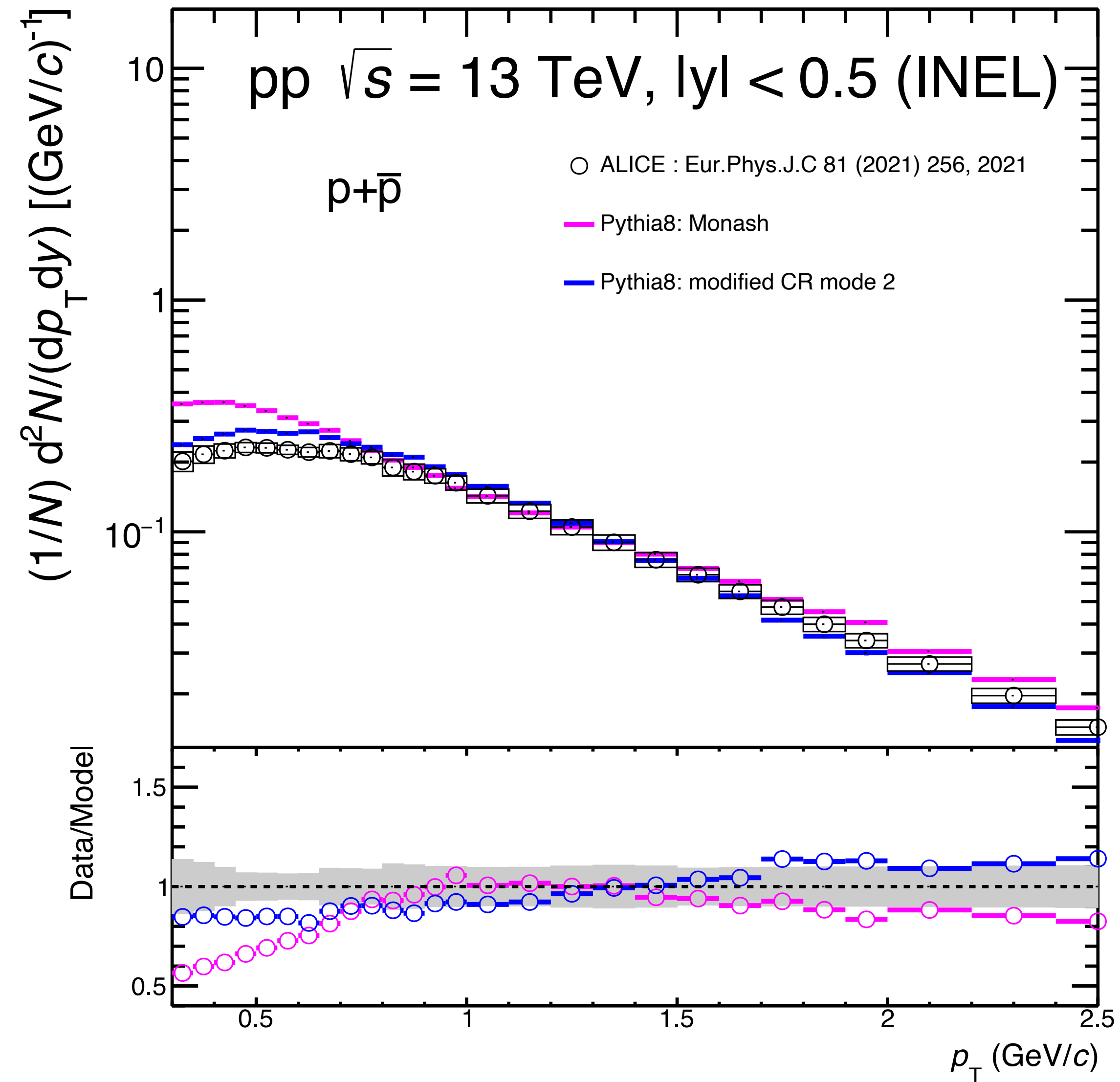
Pythia 8 simulations :

- implement HM trigger selection
- run equivalent of 300 M events MB
- check charged particle multiplicity distributions for HM pp + protons spectra
- add deuterons to anti d
- produce B2 as done for data
- run r_eff pythia source && r_core pythia
- check resonance cocktail and extract angular distribution

Backup



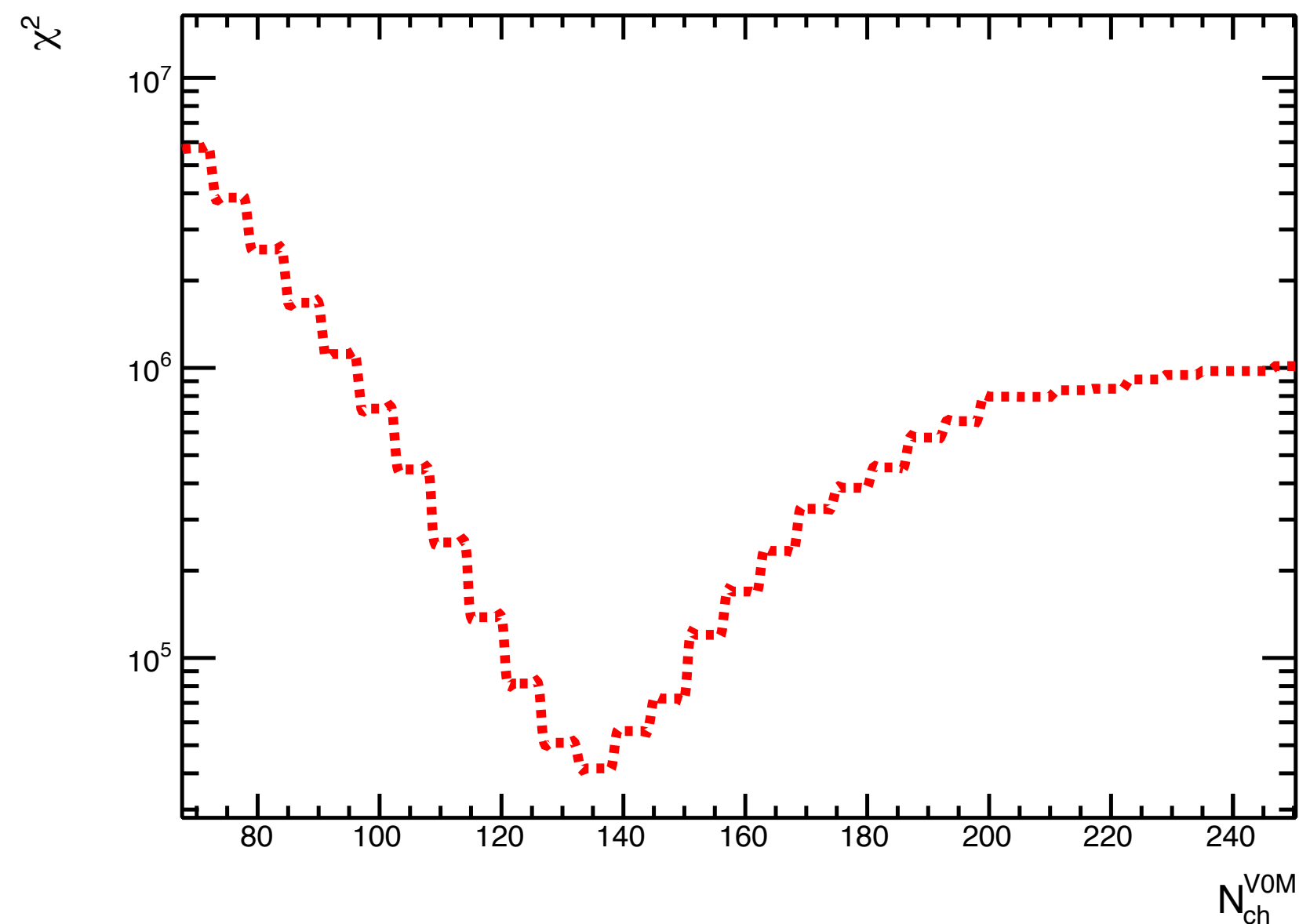
PYTHIA8 custom tune vs Monash (Proton spectrum - INEL)



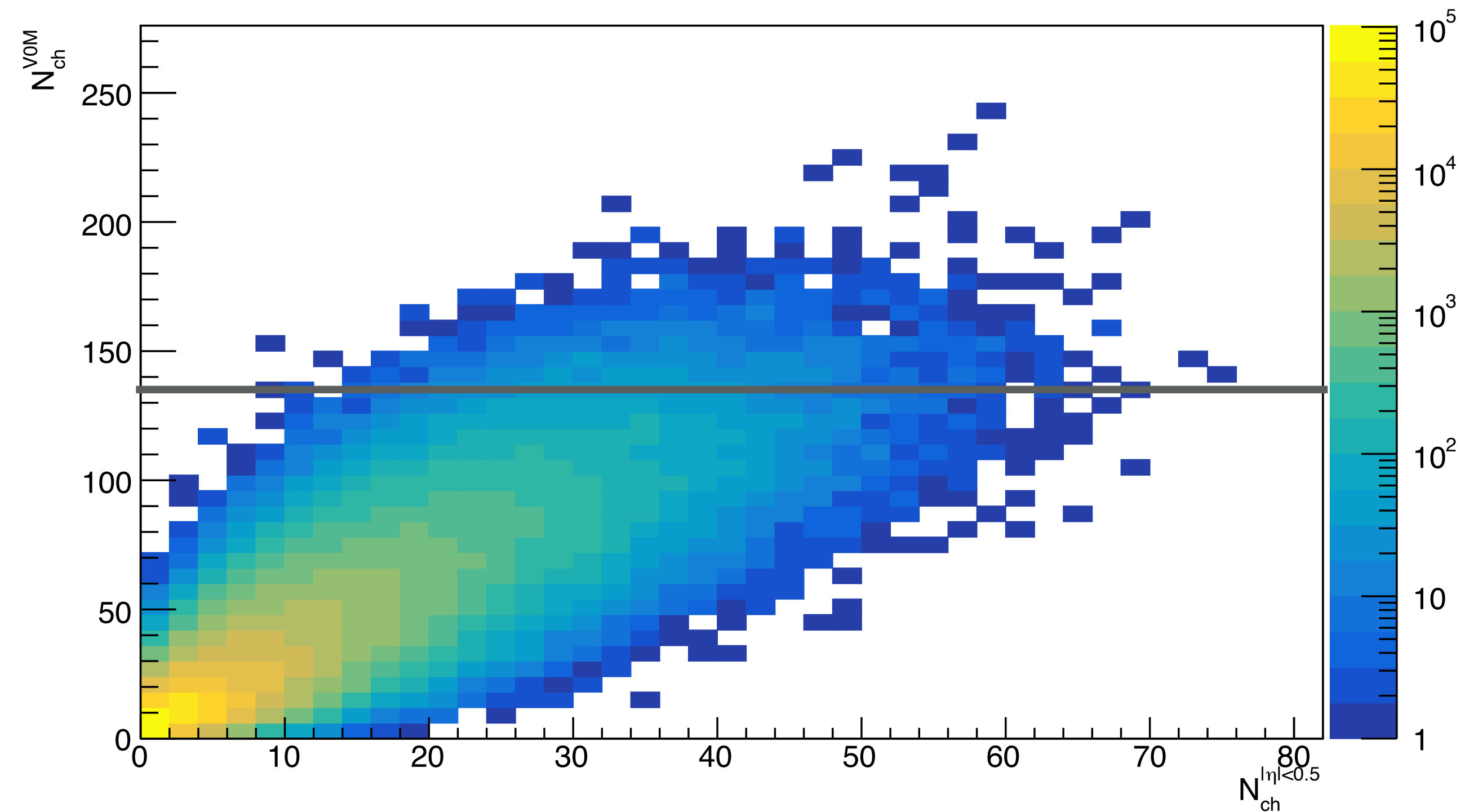


Correlation of V0M and mid-rapidity multiplicity (CR mode 2)

- Followed similar approach taken by Maxi ([slides](#))
- Correlate charged particle multiplicities in V0M region with mid-rapidity
- Trigger for different V0M multiplicities and compare mid-rapidity to ALICE measurement
- χ^2 obtained from the each bins of the mid-rapidity N_{ch} distribution



Min. Value of χ^2 at $N_{ch}^{V0M} > 135$ (0.4% of MB)

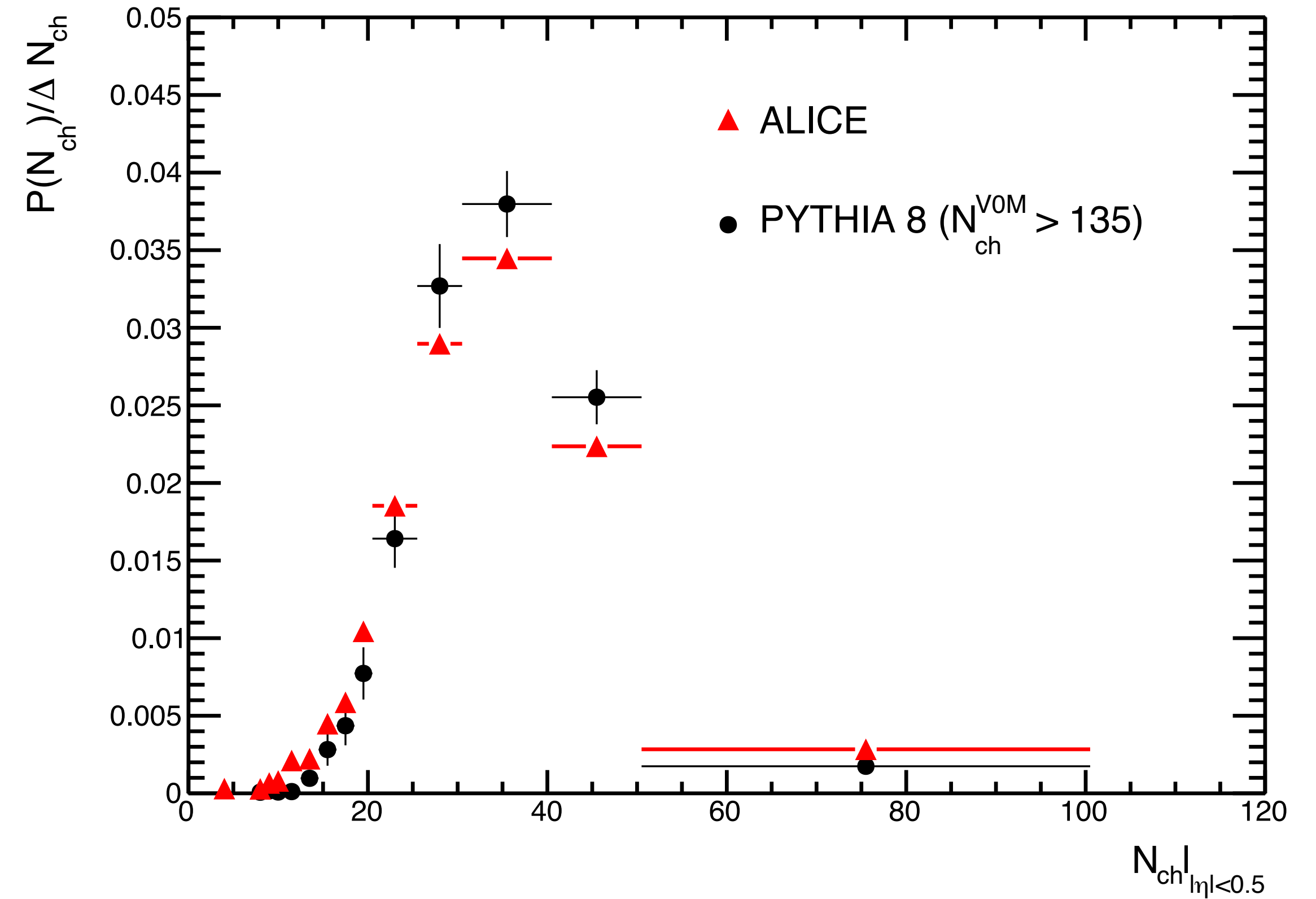
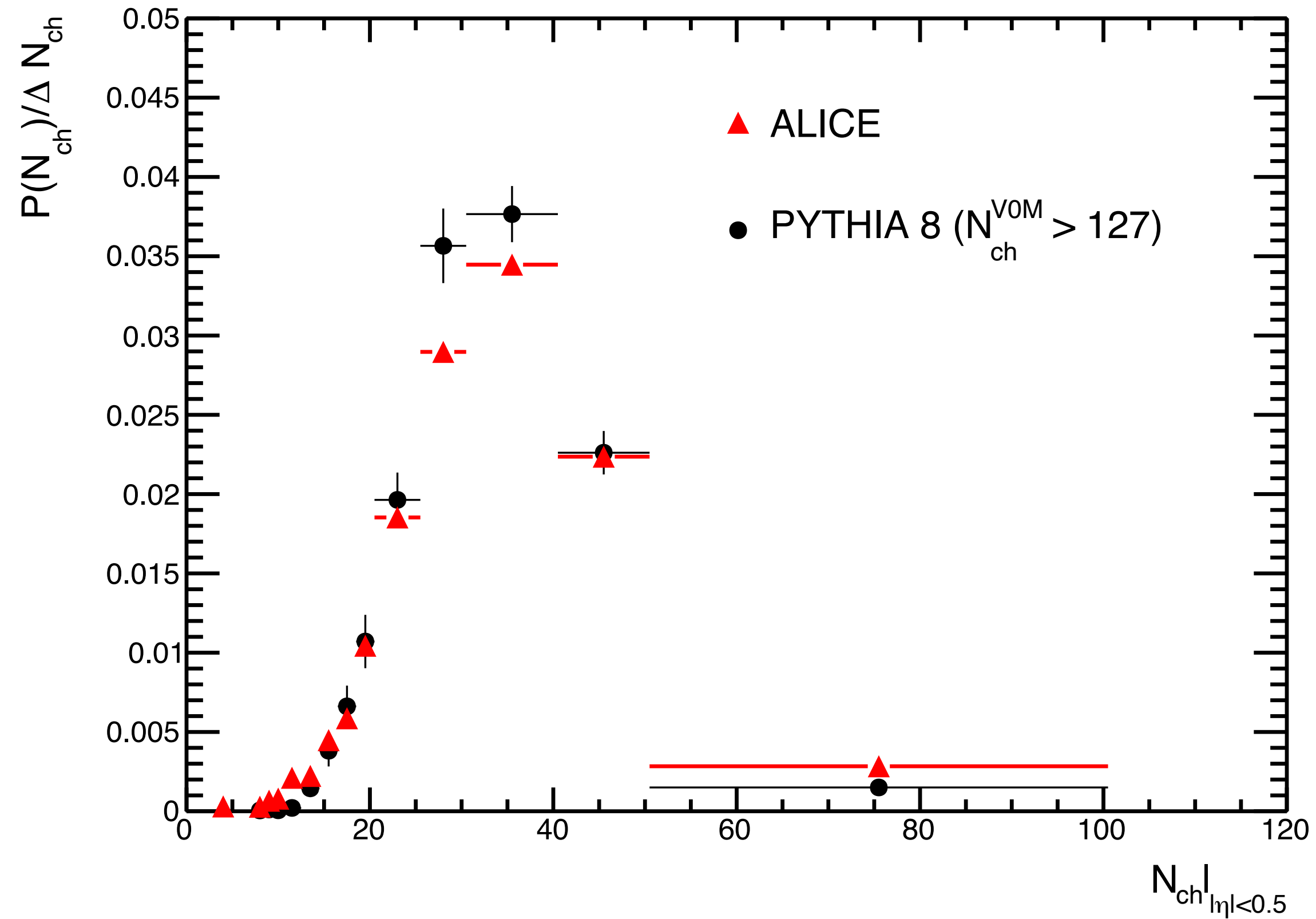


V0M: $2.8 < \eta < 5.1$ and $-3.7 < \eta < -1.7$

Mid-rapidity: $-0.5 < \eta < 0.5$

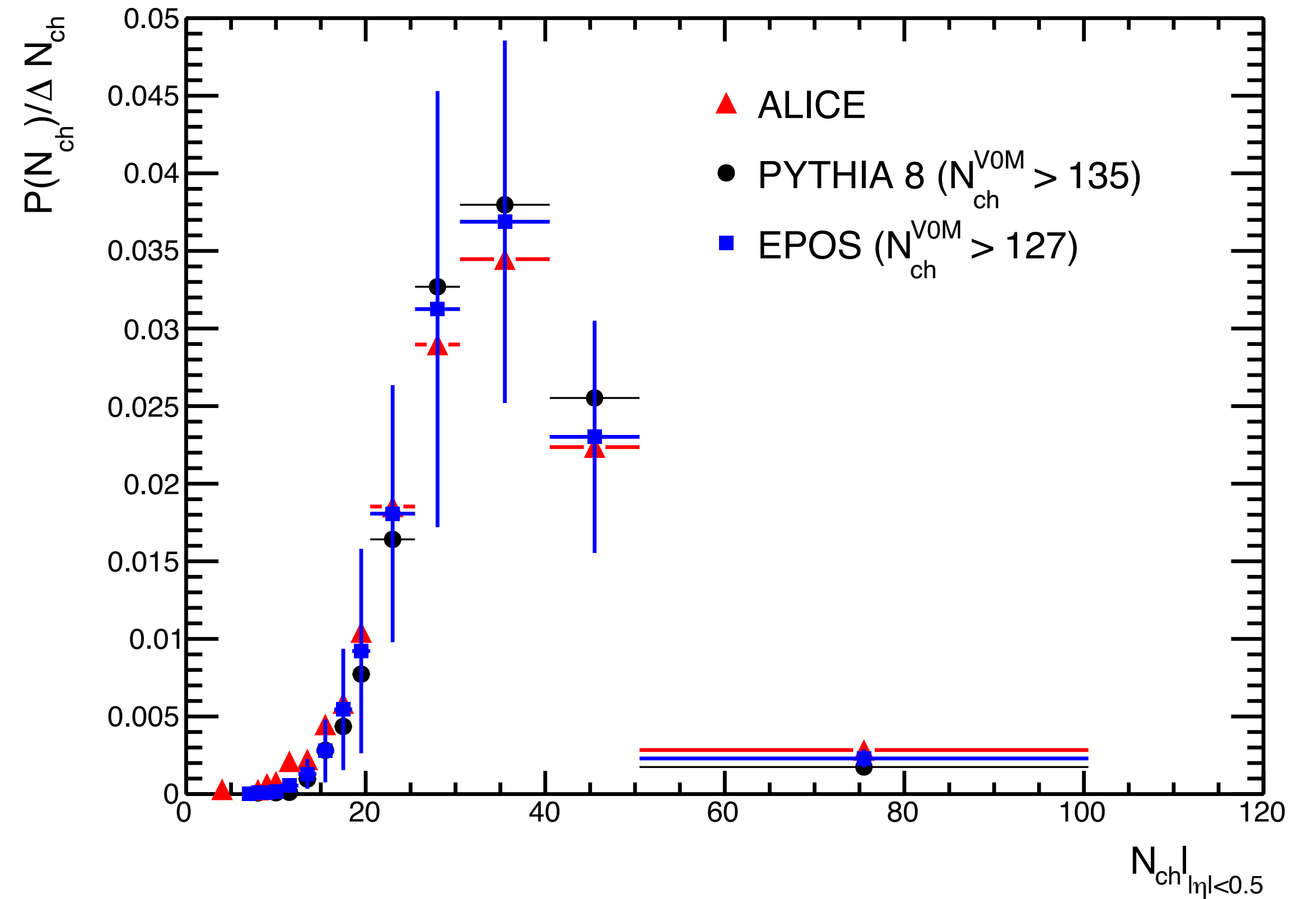
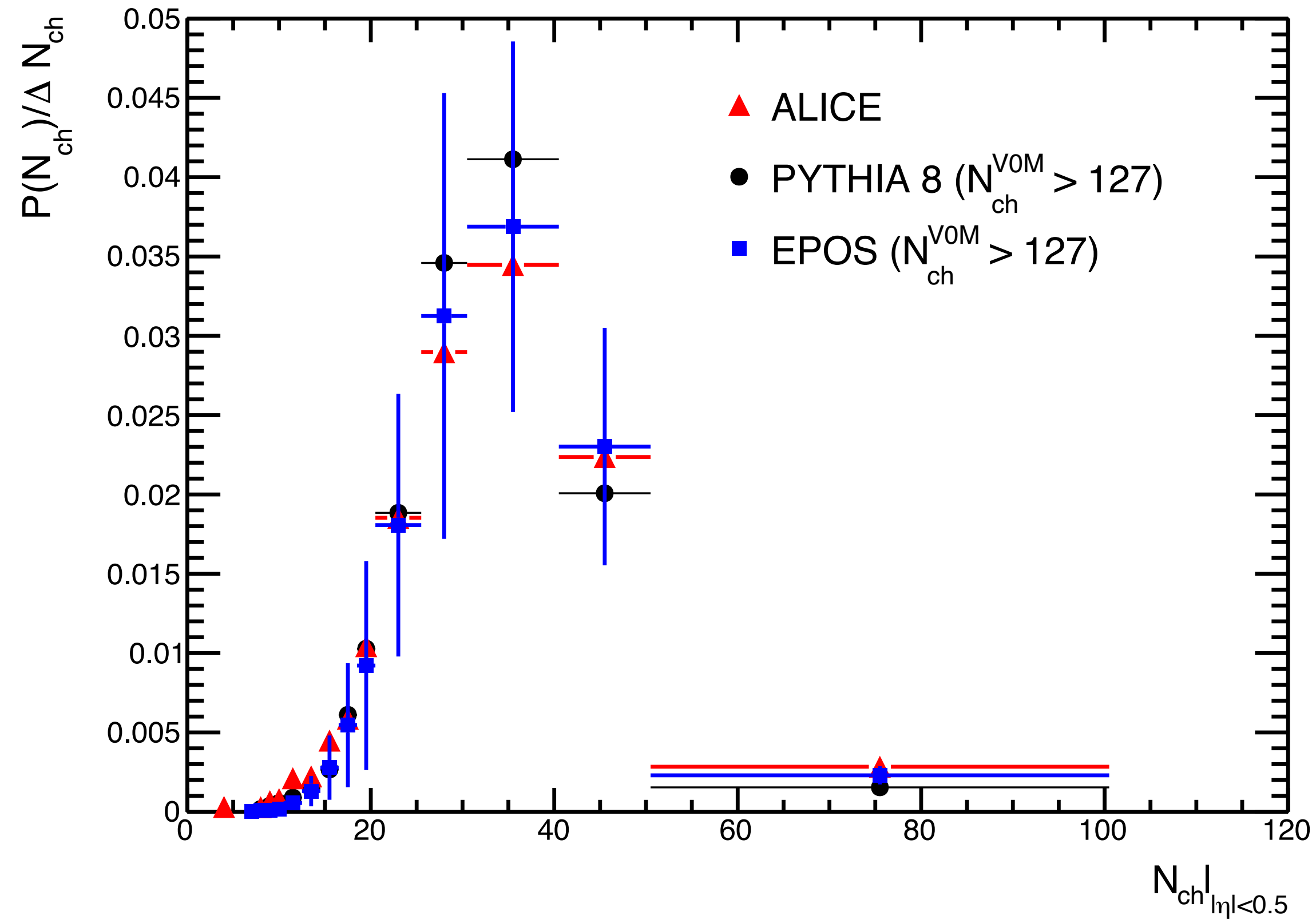


PYTHIA 8 (CR mode 2) vs ALICE data



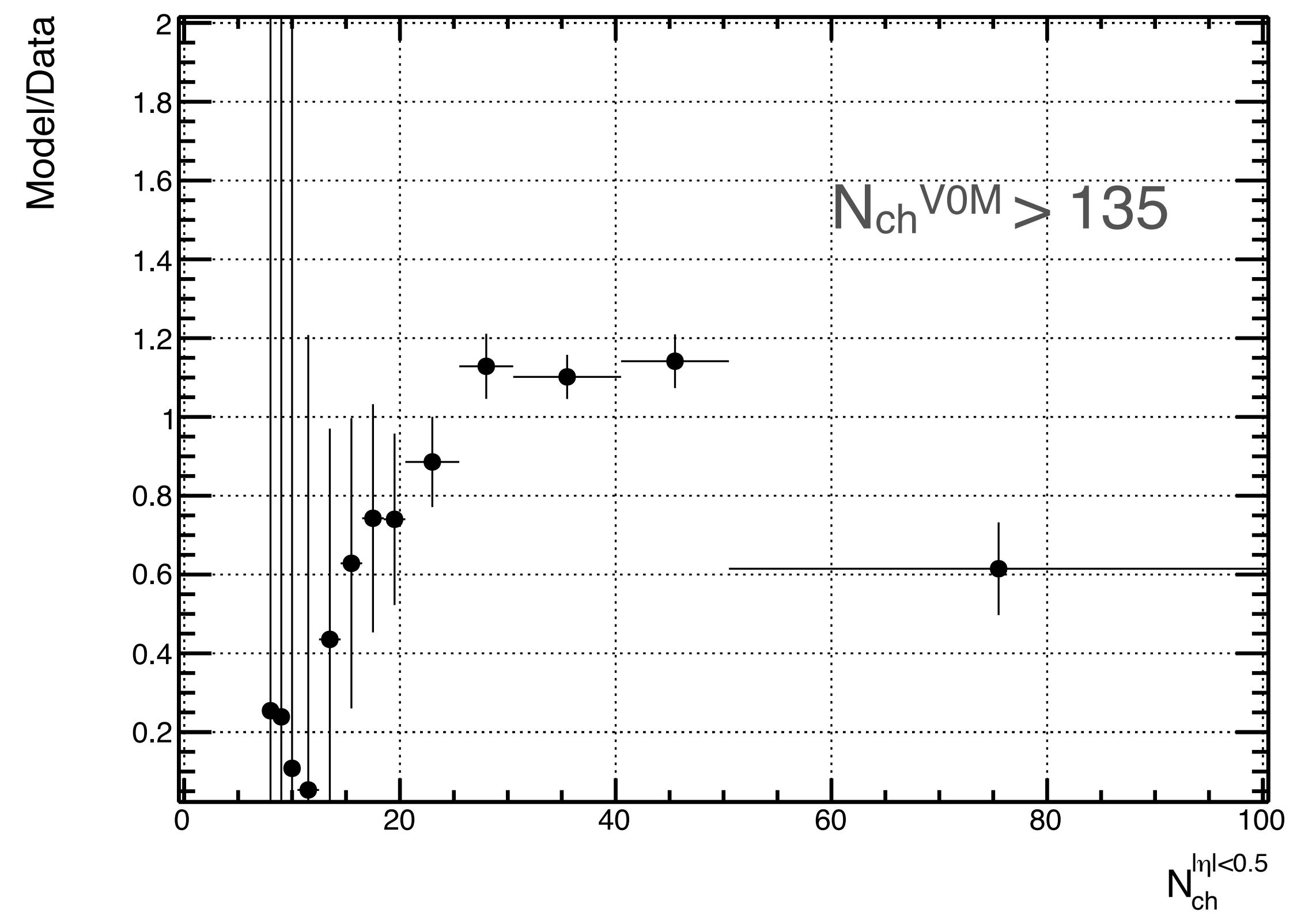
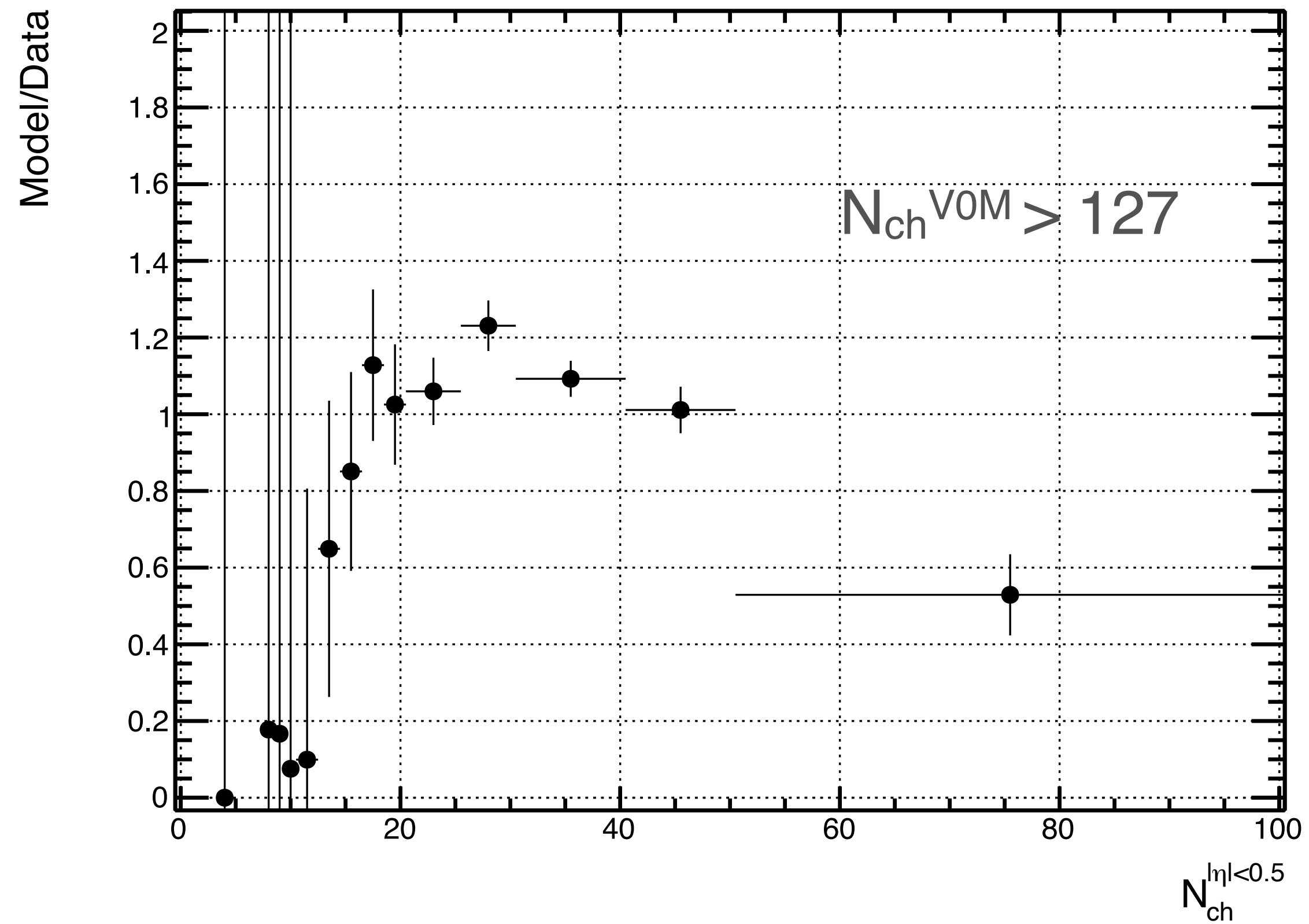


PYTHIA 8 (CR mode 2) vs EPOS and ALICE



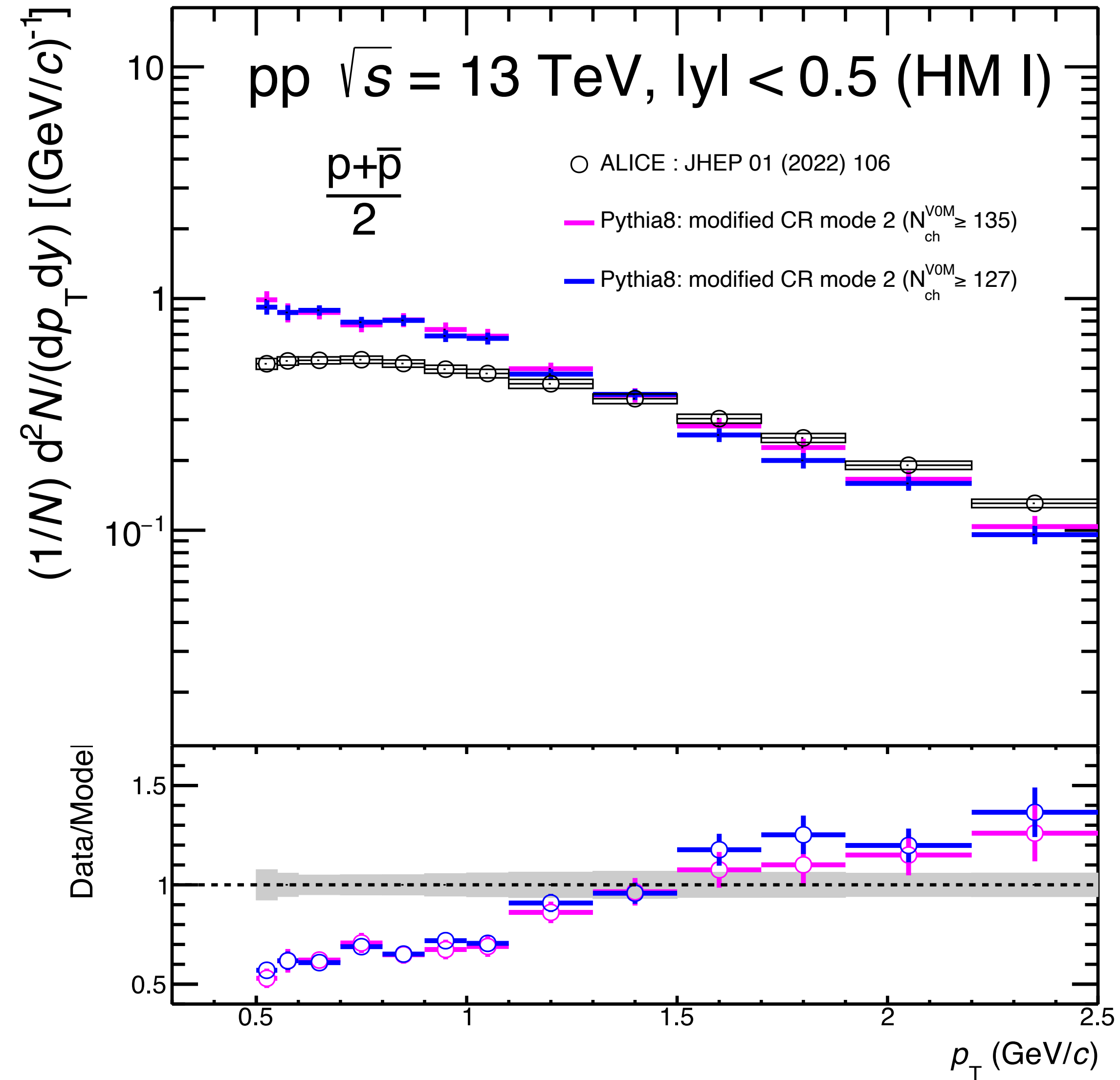


PYTHIA 8 (CR mode 2) vs ALICE data





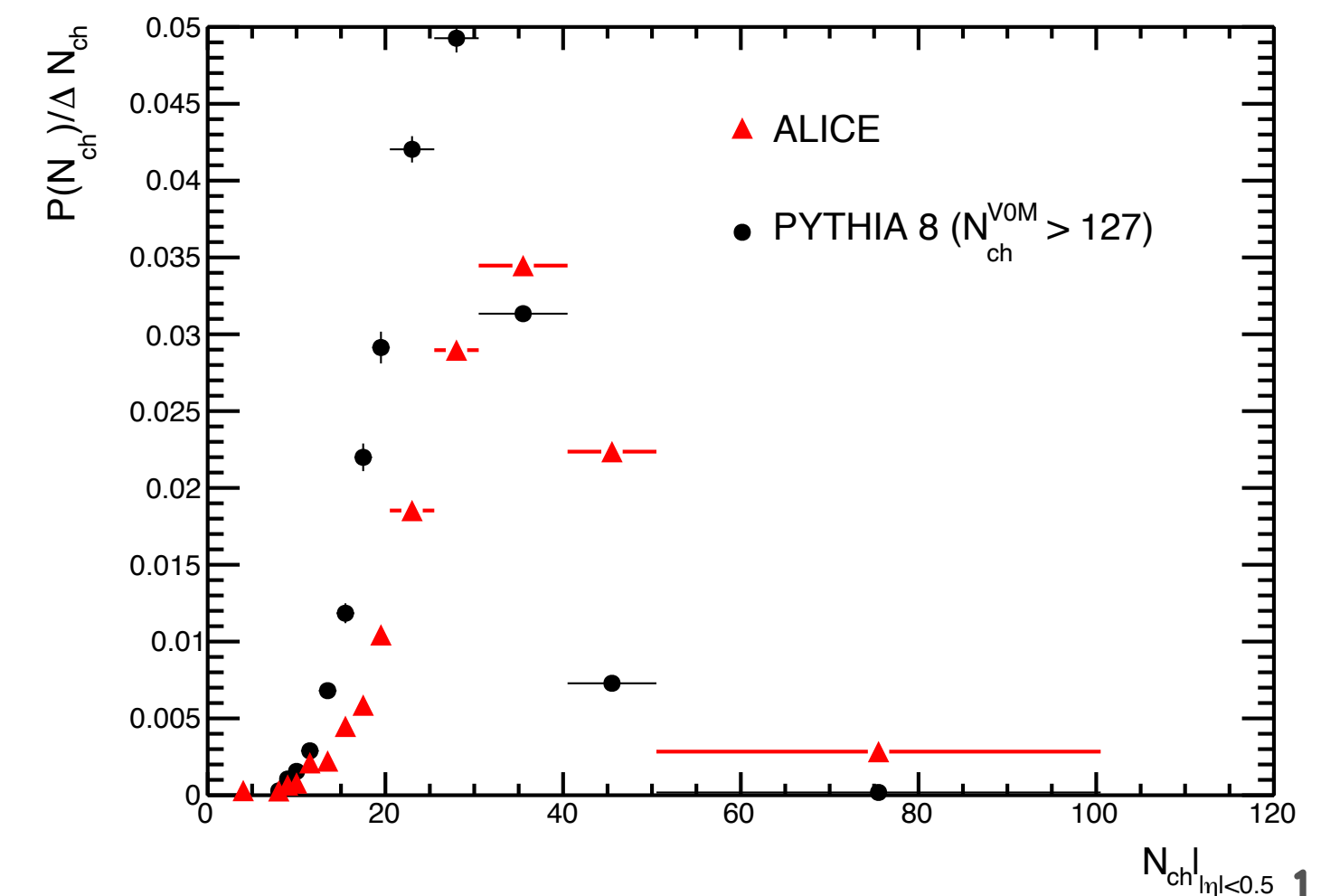
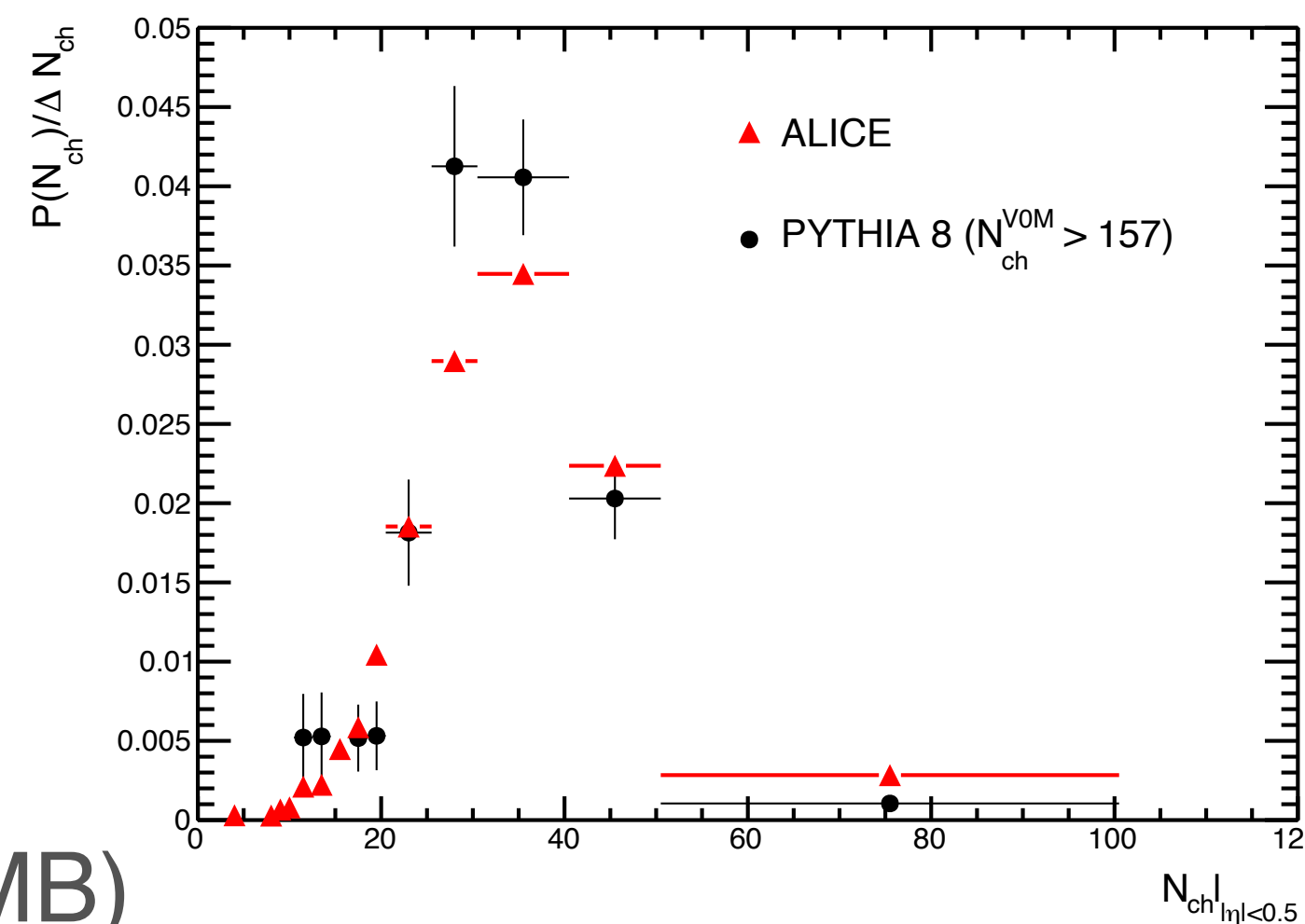
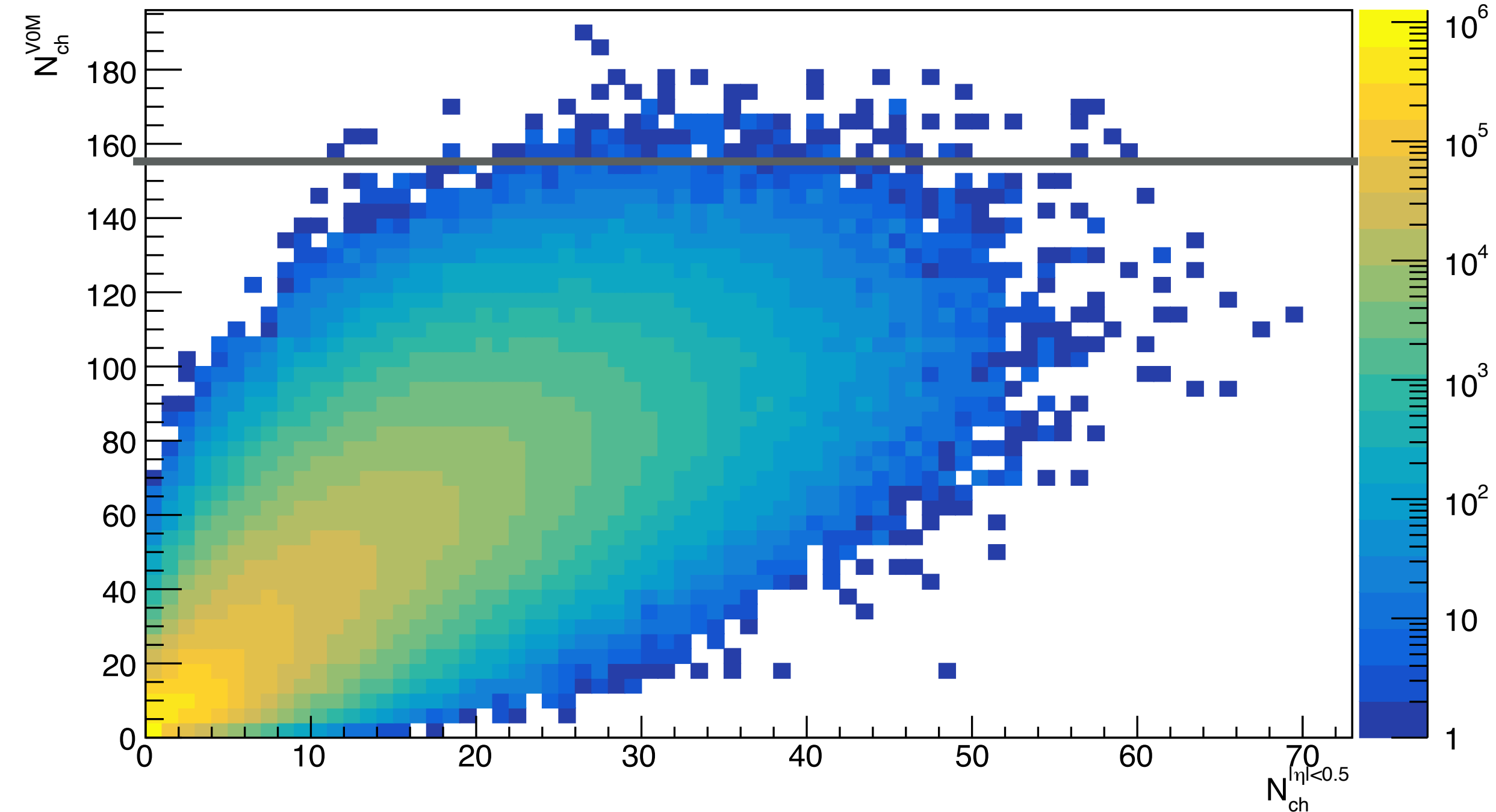
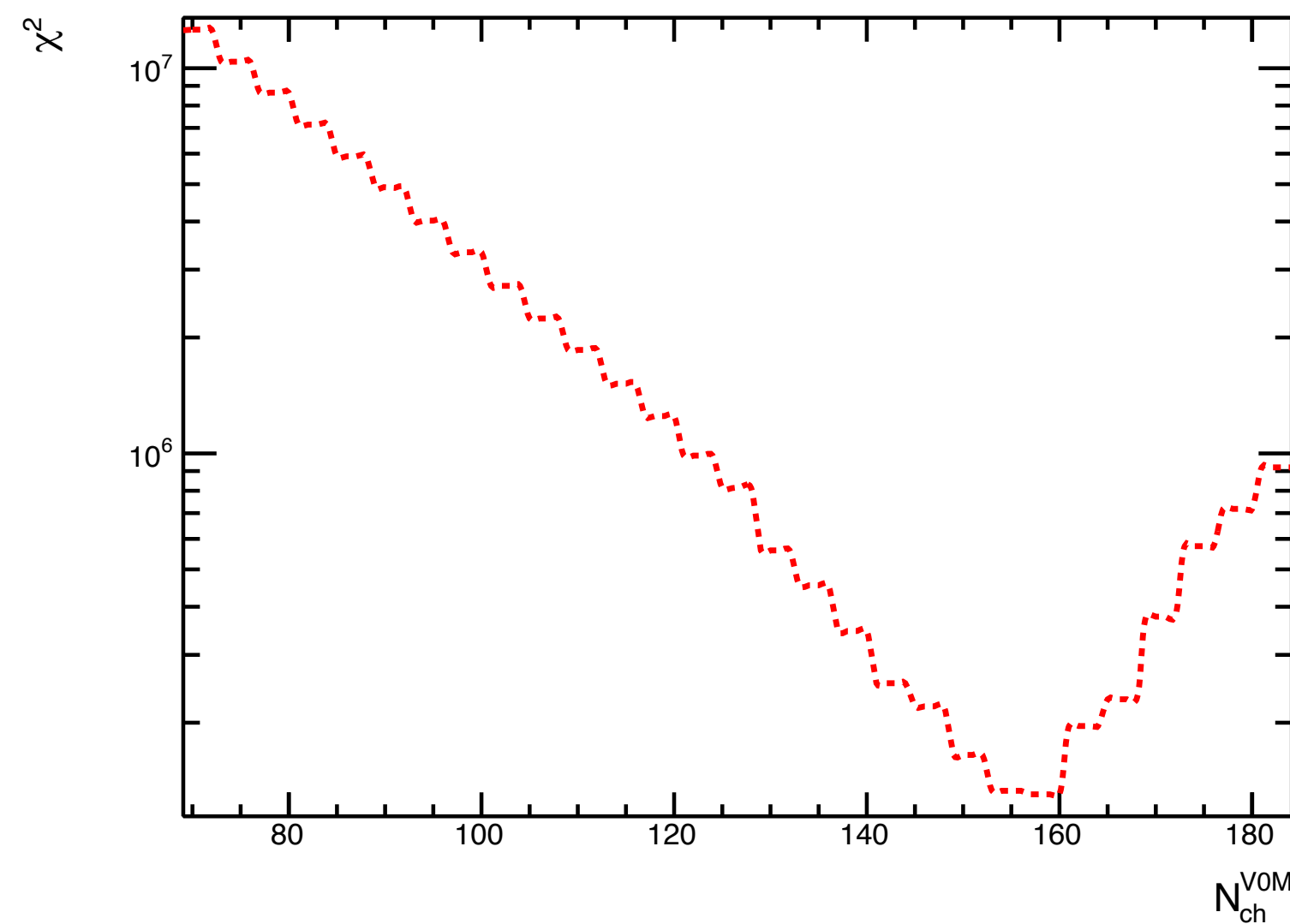
Comparison with ALICE data (Proton spectrum - HM I)





Correlation of V0M and mid-rapidity multiplicity (Monash)

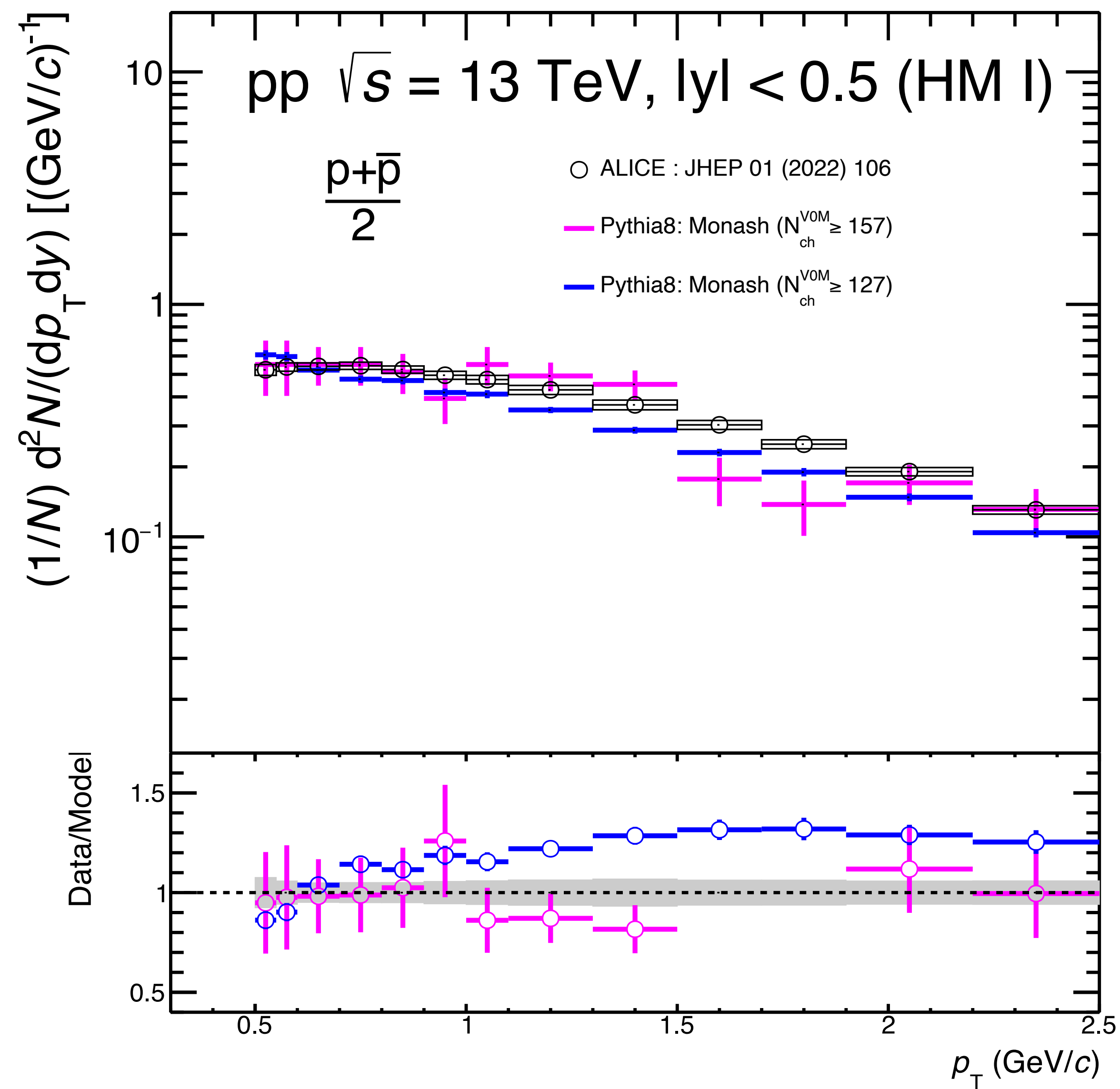
- Followed similar approach taken by Maxi ([slides](#))
- Correlate charged particle multiplicities in V0M region with mid-rapidity
- Trigger for different V0M multiplicities and compare mid-rapidity to ALICE measurement
- χ^2 obtained from the each bins of the mid-rapidity N_{ch} distribution



Min. Value of χ^2 at $N_{ch}^{V0M} > 157$ (0.005% of MB)



Comparison with ALICE data (Proton spectrum - HM I)





Comparison with ALICE data (Proton spectrum - INEL)

