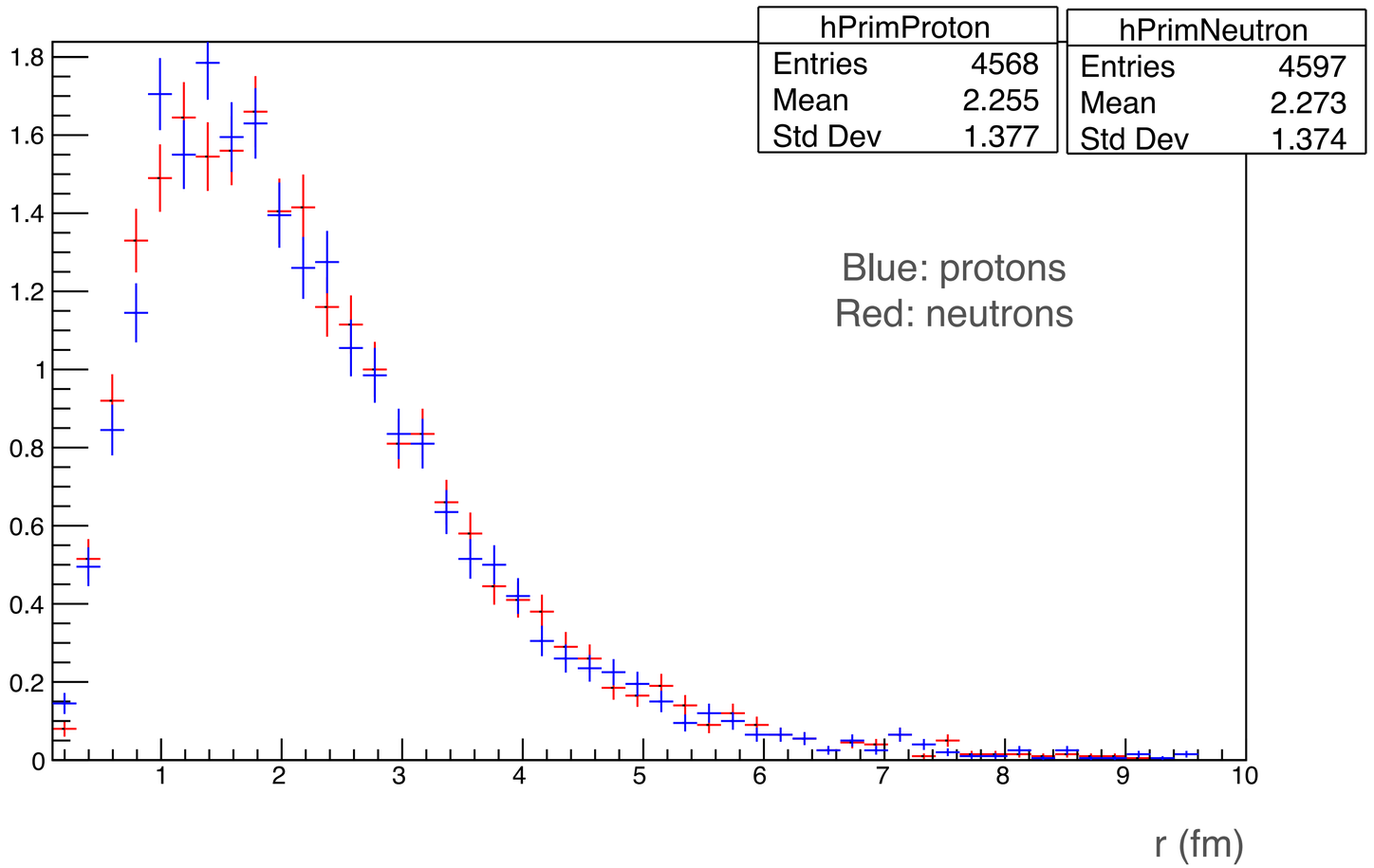
To do…

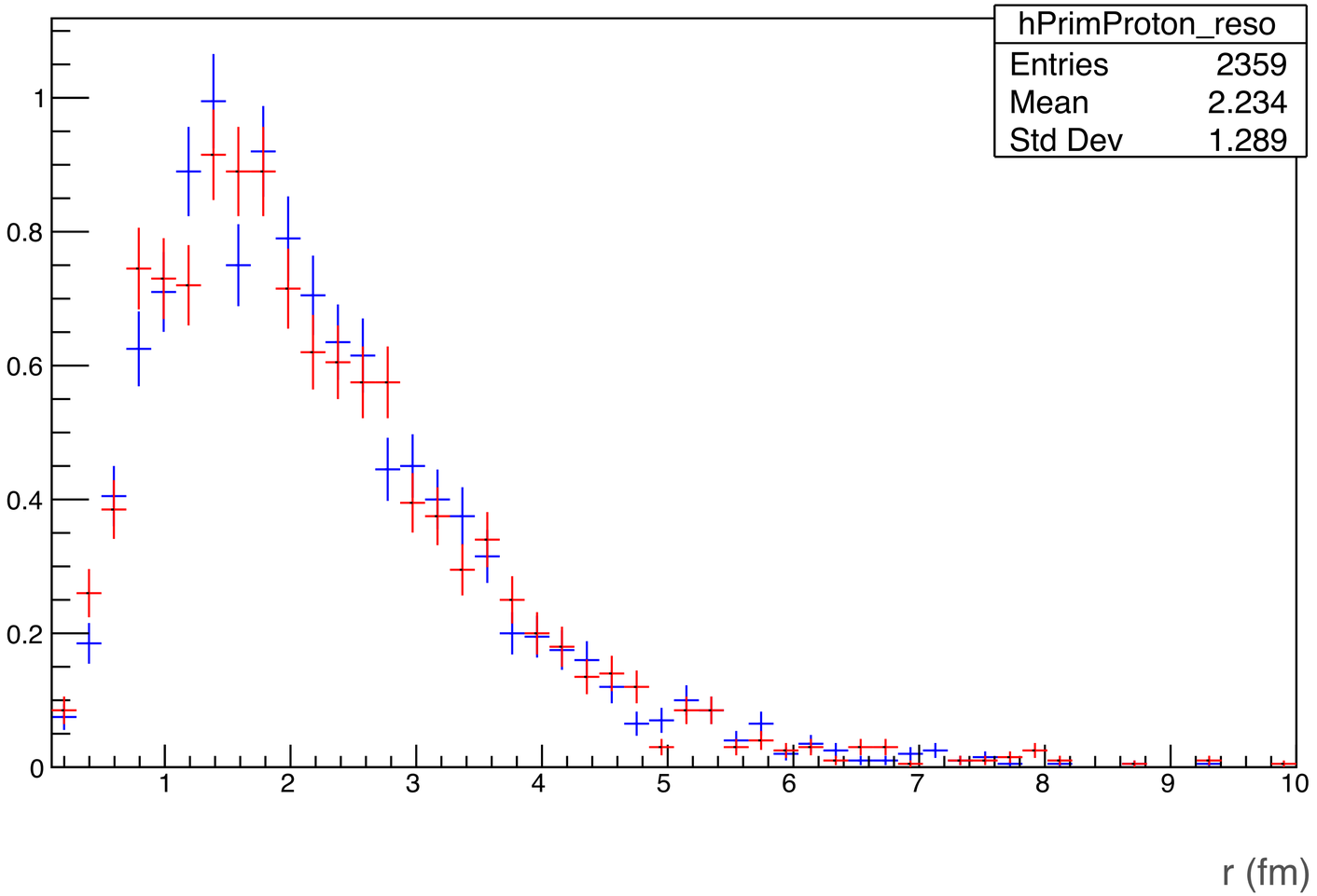
Pythia 8 simulations :

- implement HM trigger selection
- run equivalent of 300 M events HM — 2B done for Monash
- check charged particle multiplicity distributions for HM pp + protons spectra
- add deuterons to anti d
- produce B2 as done for data
- check resonance cocktail and extract angular distribution
- run r_eff pythia source && r_core pythia

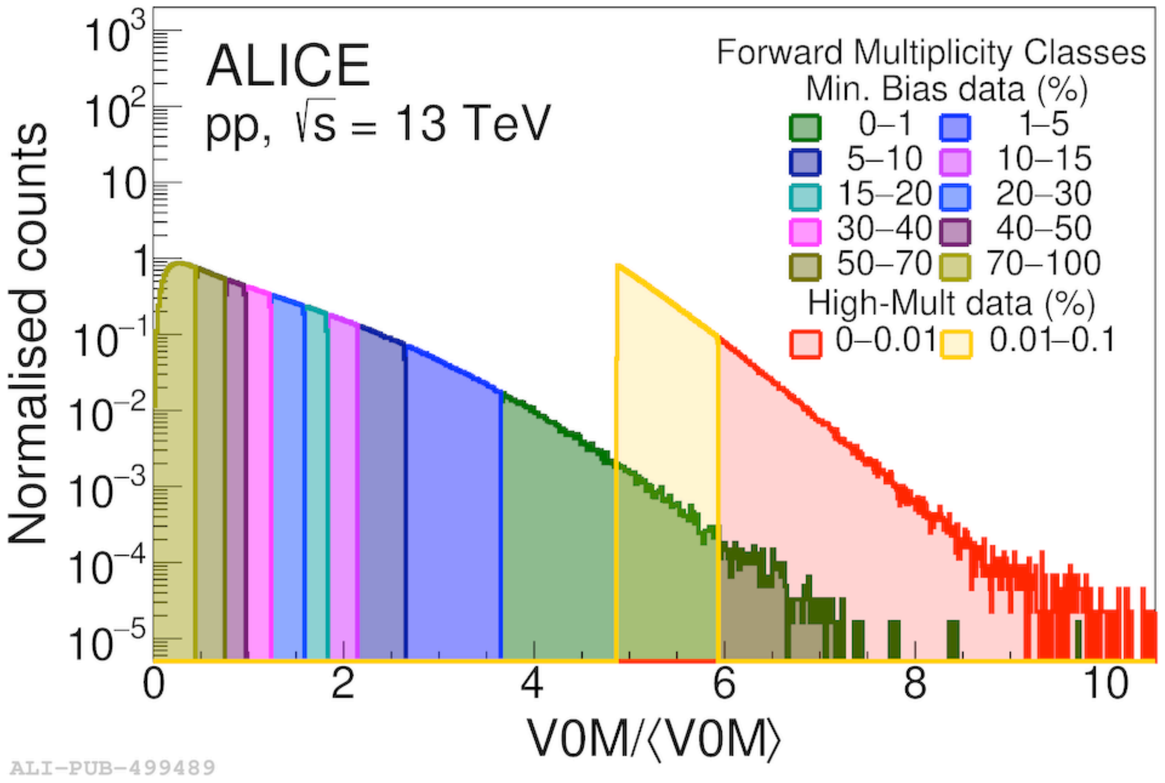
Radial distributions of primordial nucleons



Radial distributions of resonances



HM trigger mult. distribution



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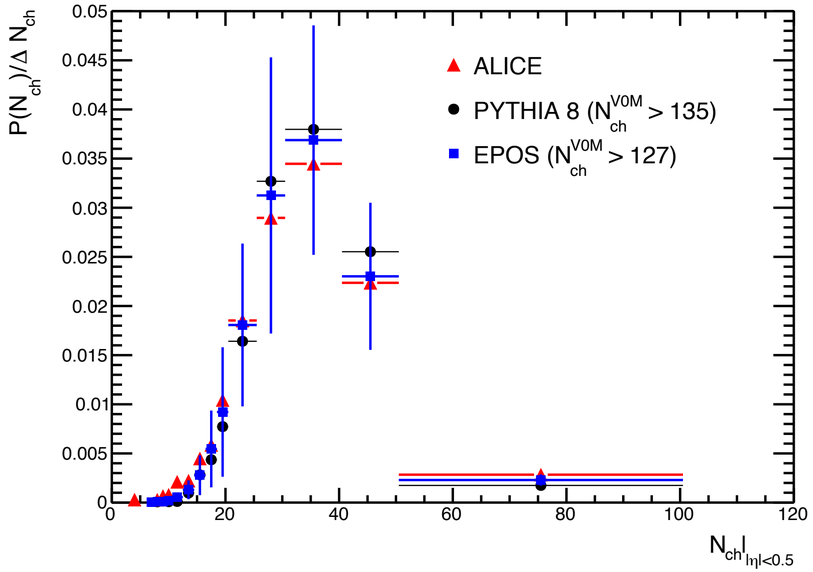
	Forward Multiplicity Estimator		
	$\sqrt{s}$ (TeV)		
	5.02	7	13
$\Delta\sigma/\sigma_{\mathrm{MB_{AND>0}}}$	$\langle \mathrm{d}N_{\mathrm{ch}}/\mathrm{d}\eta \rangle \pm$uncorrelated systematic uncert		
0–0.01%	24.53±0.23±0.31	29.13±0.25±0.44	35.82±0.33±0.33
0.01–0.05%	22.42±0.21±0.23	26.27±0.23±0.30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



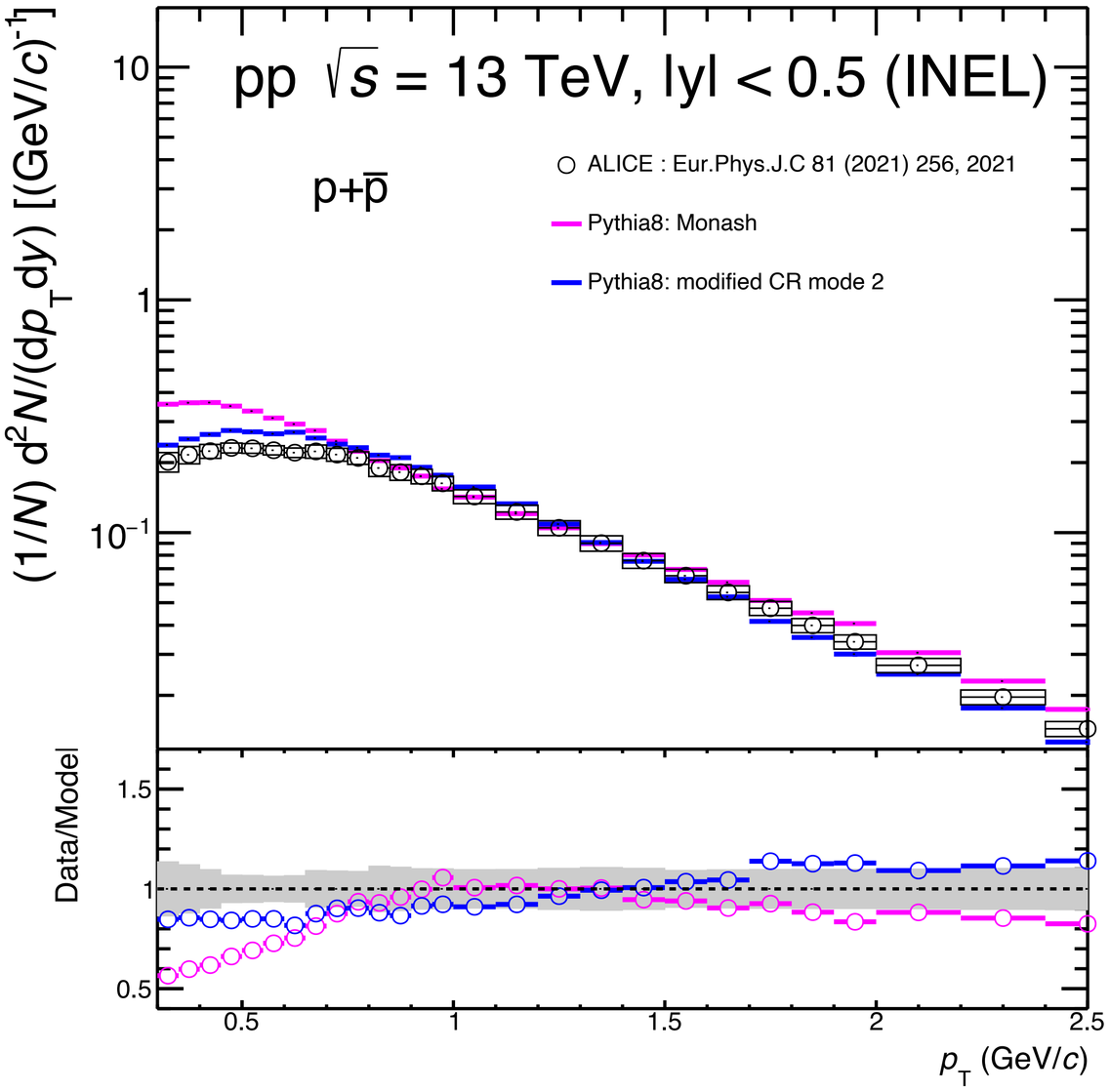
$\langle dN_{ch}/d\eta \rangle$

EPOS = 31.75 ± 1.87

Pythia = 30.96 ± 0.31

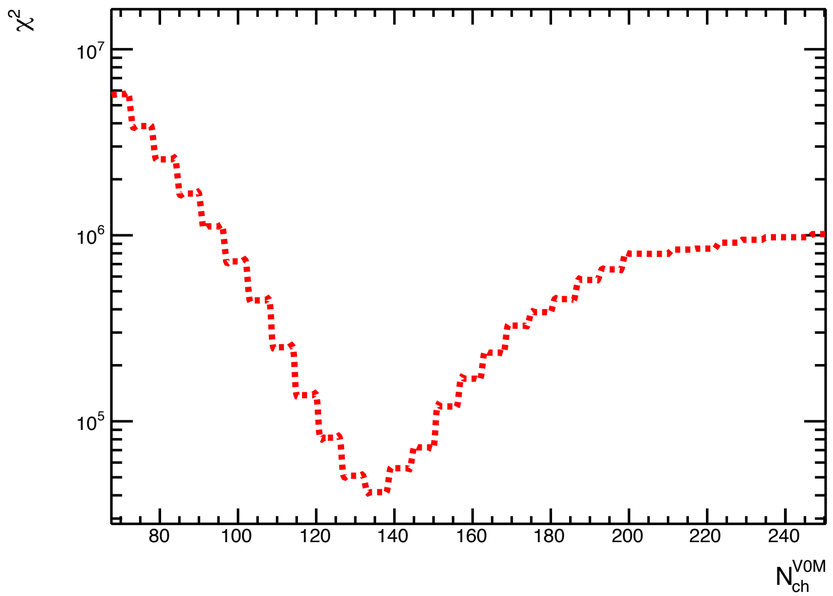
Backup

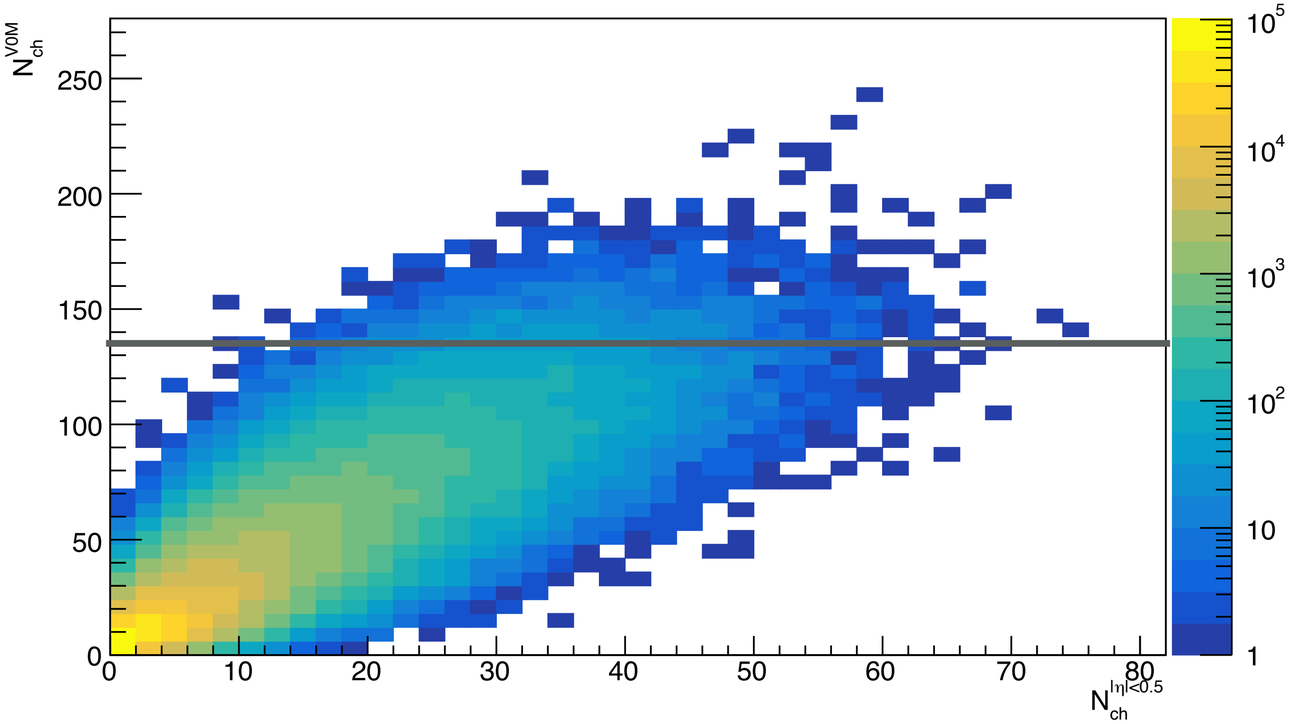
PYTHIA8 custom tune vs Monash (Proton spectrum - INEL)



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



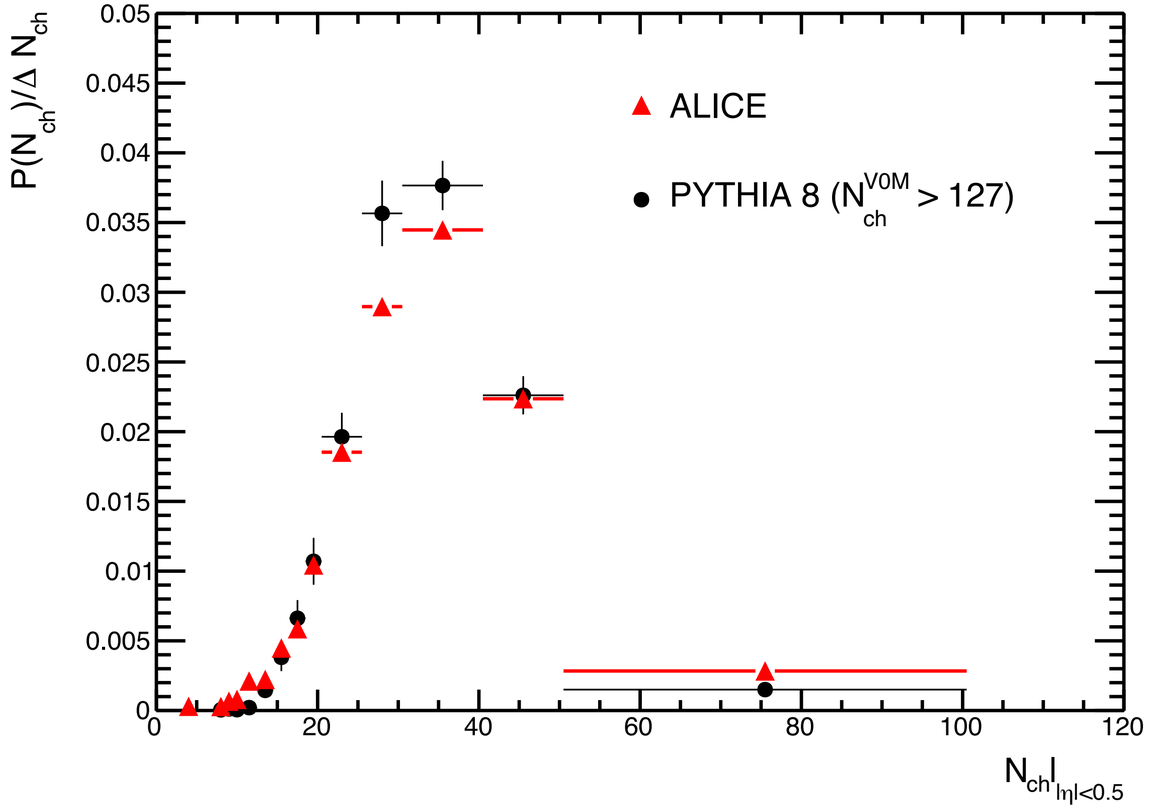


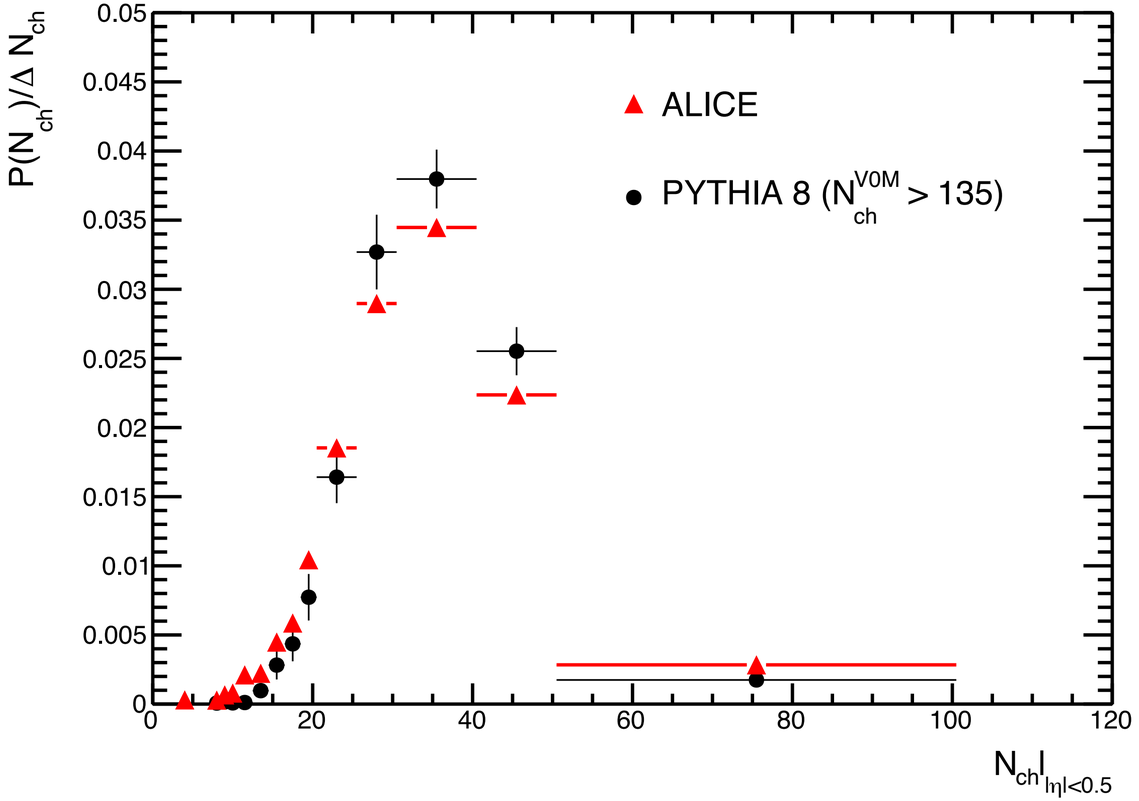
V0M: 2.8< η <5.1 and -3.7 < η <-1.7

Mid-rapidity: -0.5 < η < 0.5

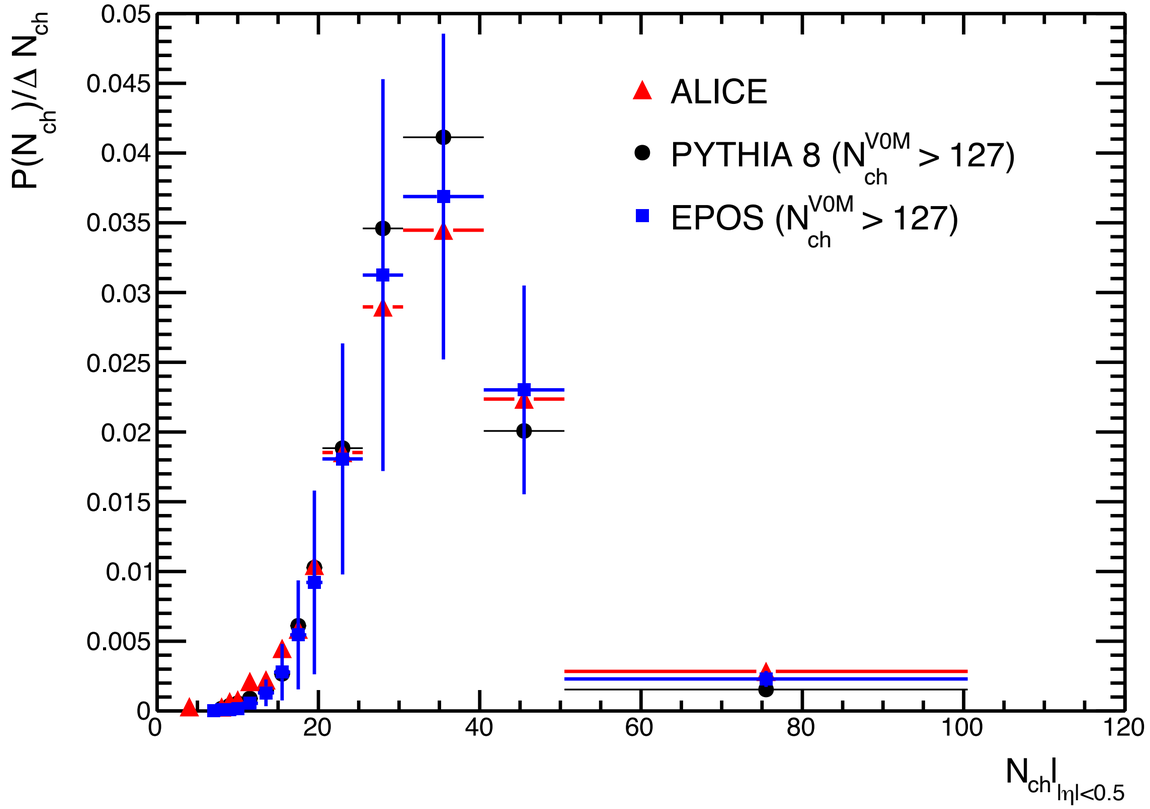
Min. Value of χ^2 at $N_{ch}^{V0M} > 135$ (0.4% of MB)

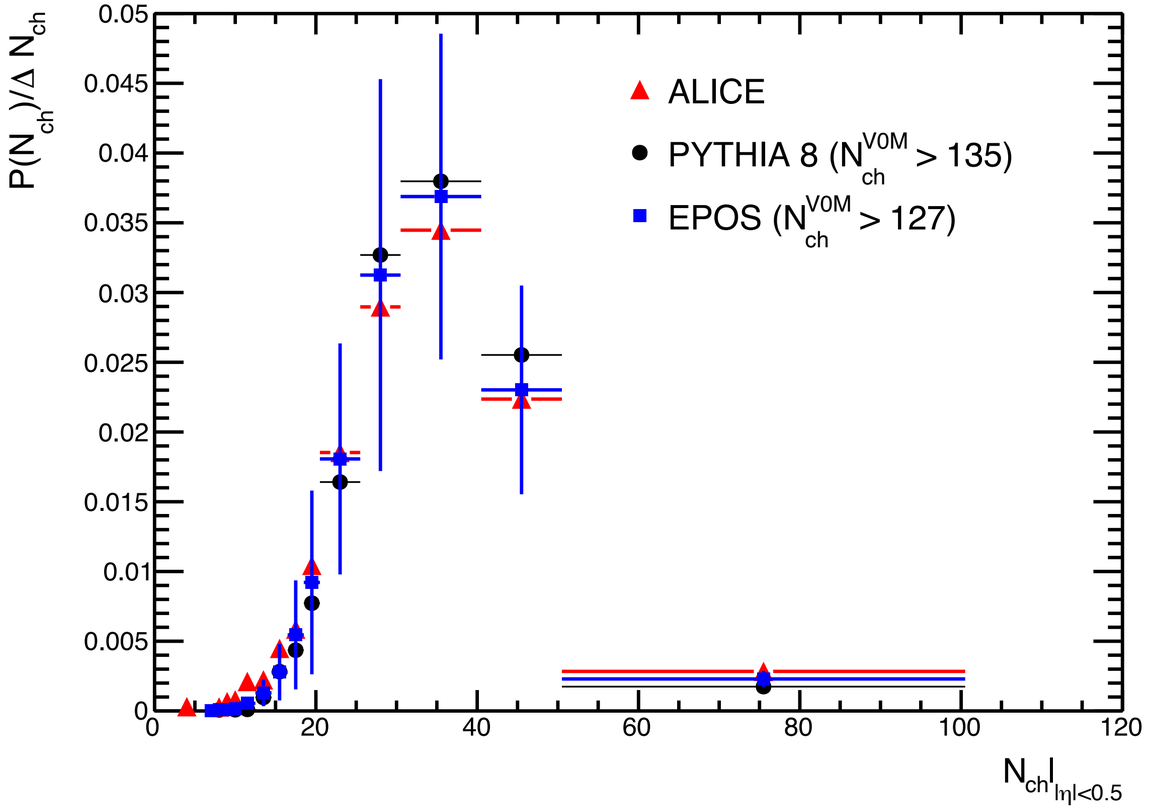
PYTHIA 8 (CR mode 2) vs ALICE data



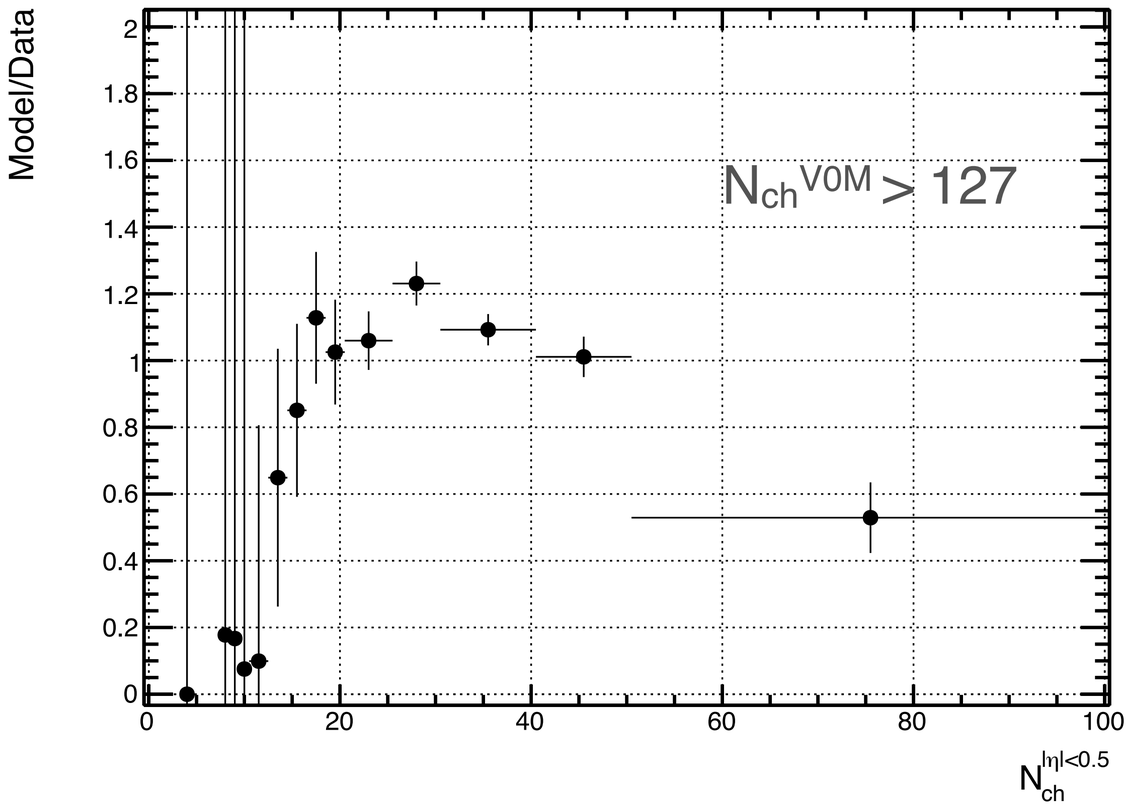


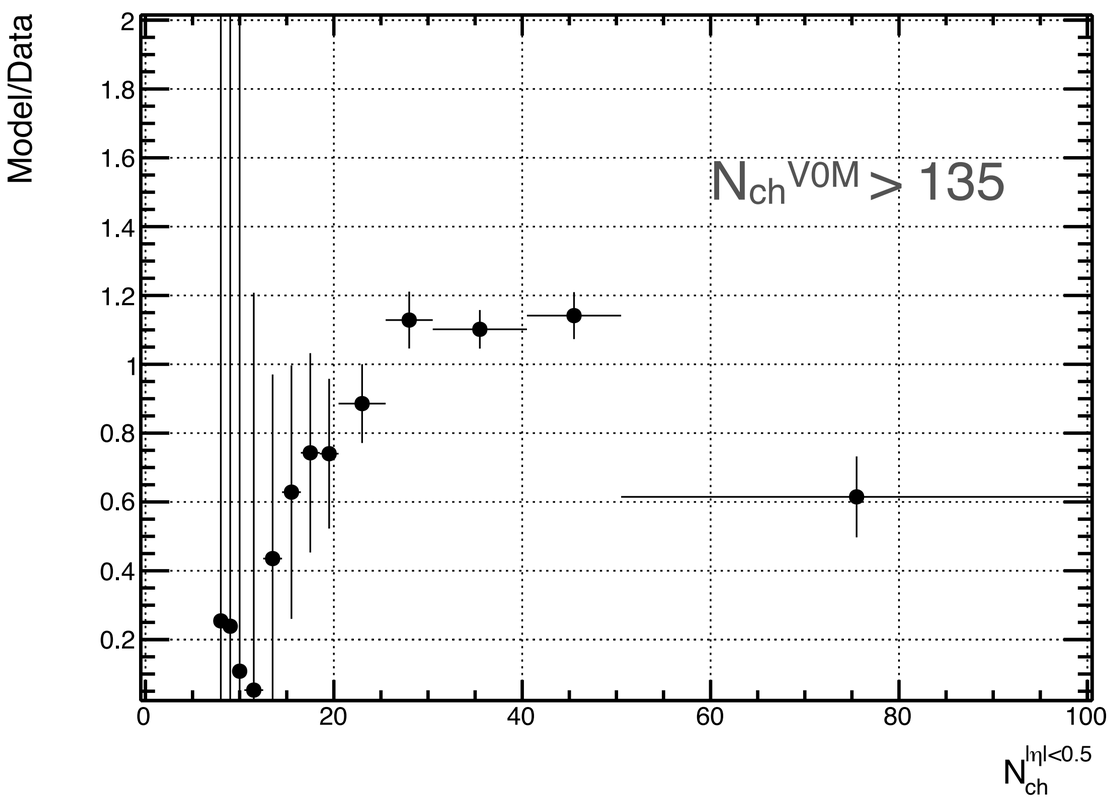
PYTHIA 8 (CR mode 2) vs EPOS and ALICE



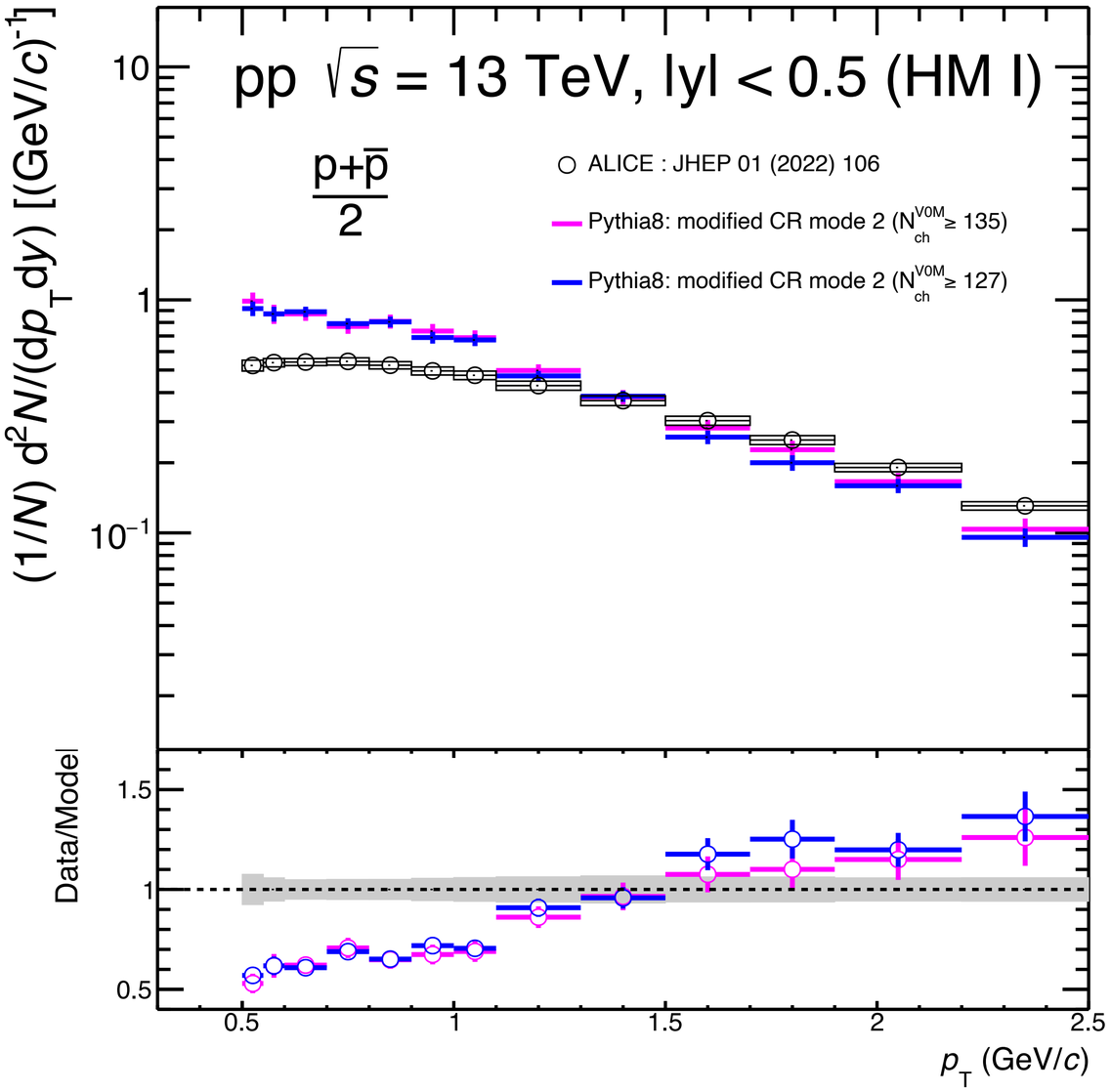


PYTHIA 8 (CR mode 2) vs ALICE data





Comparison with ALICE data (Proton spectrum - HM I)



Correlation of V0M and mid-rapidity multiplicity (Monash)

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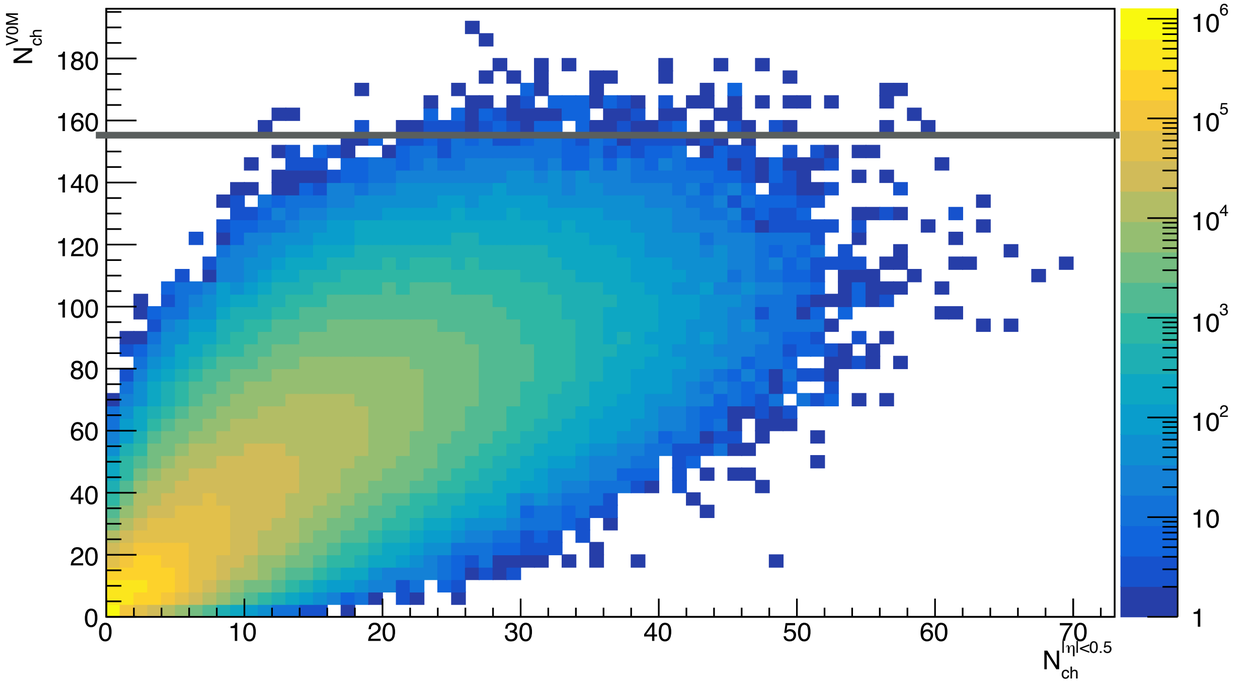
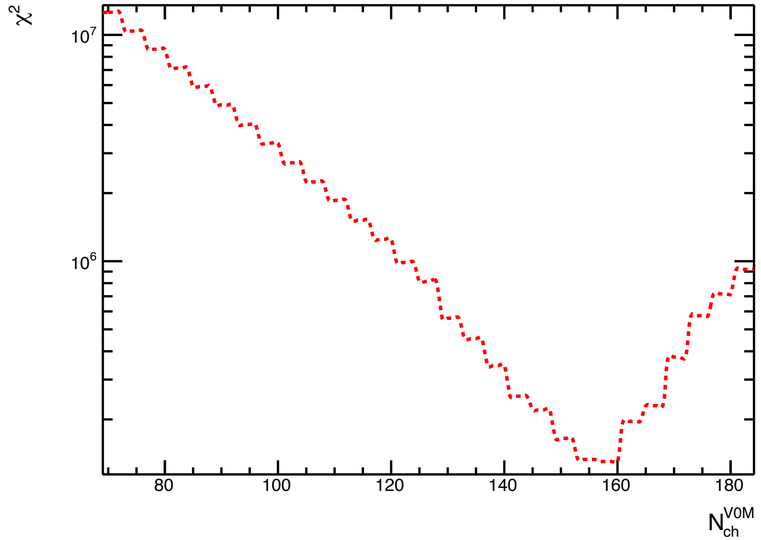
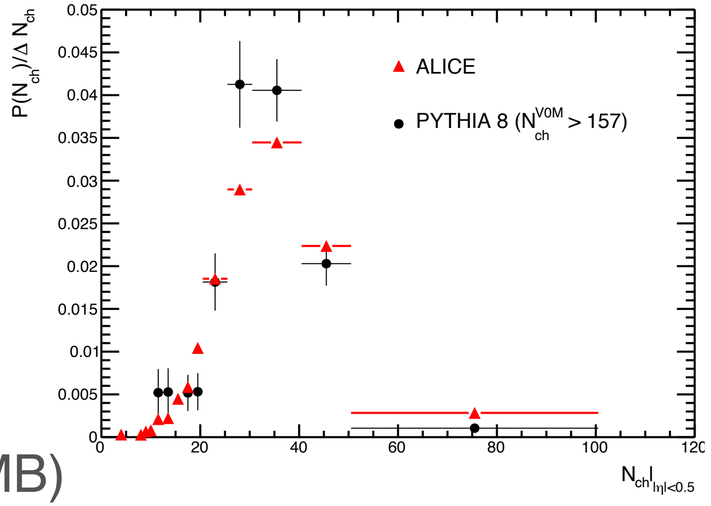
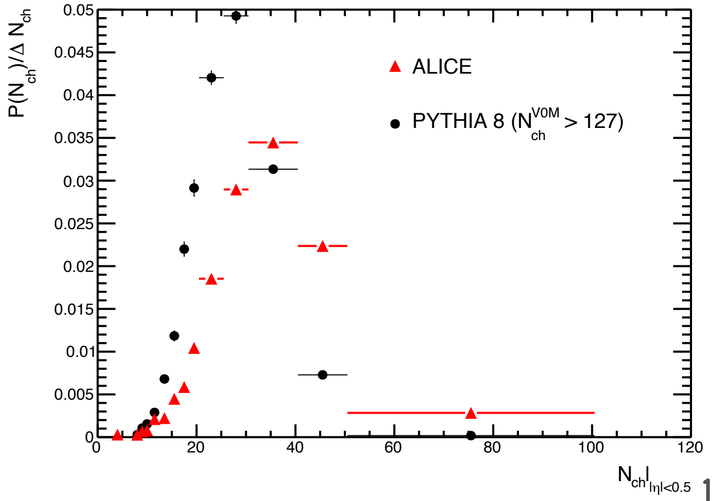
- χ^2 obtained from the each bins of the mid-rapidity N_{ch} distribution



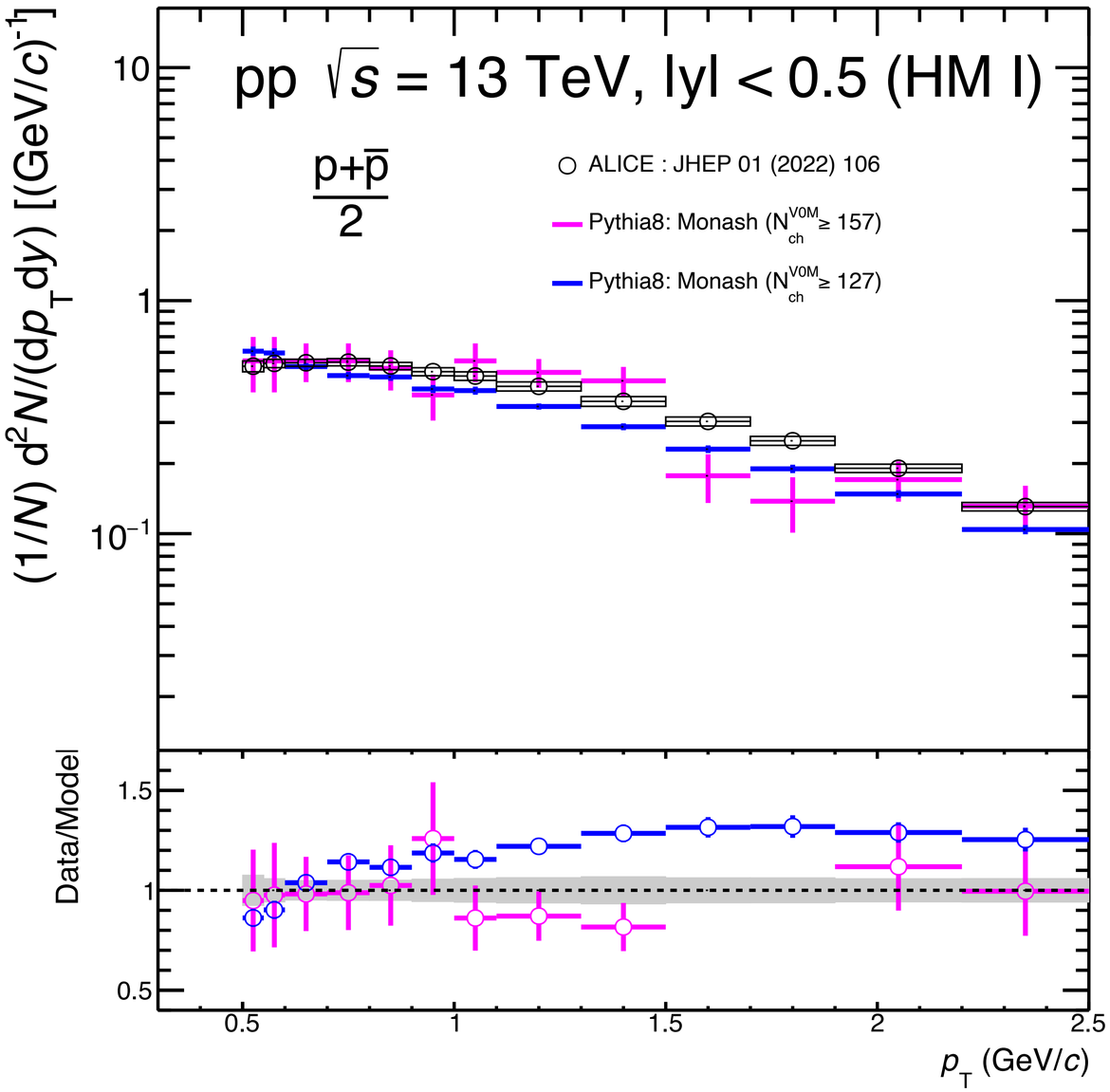






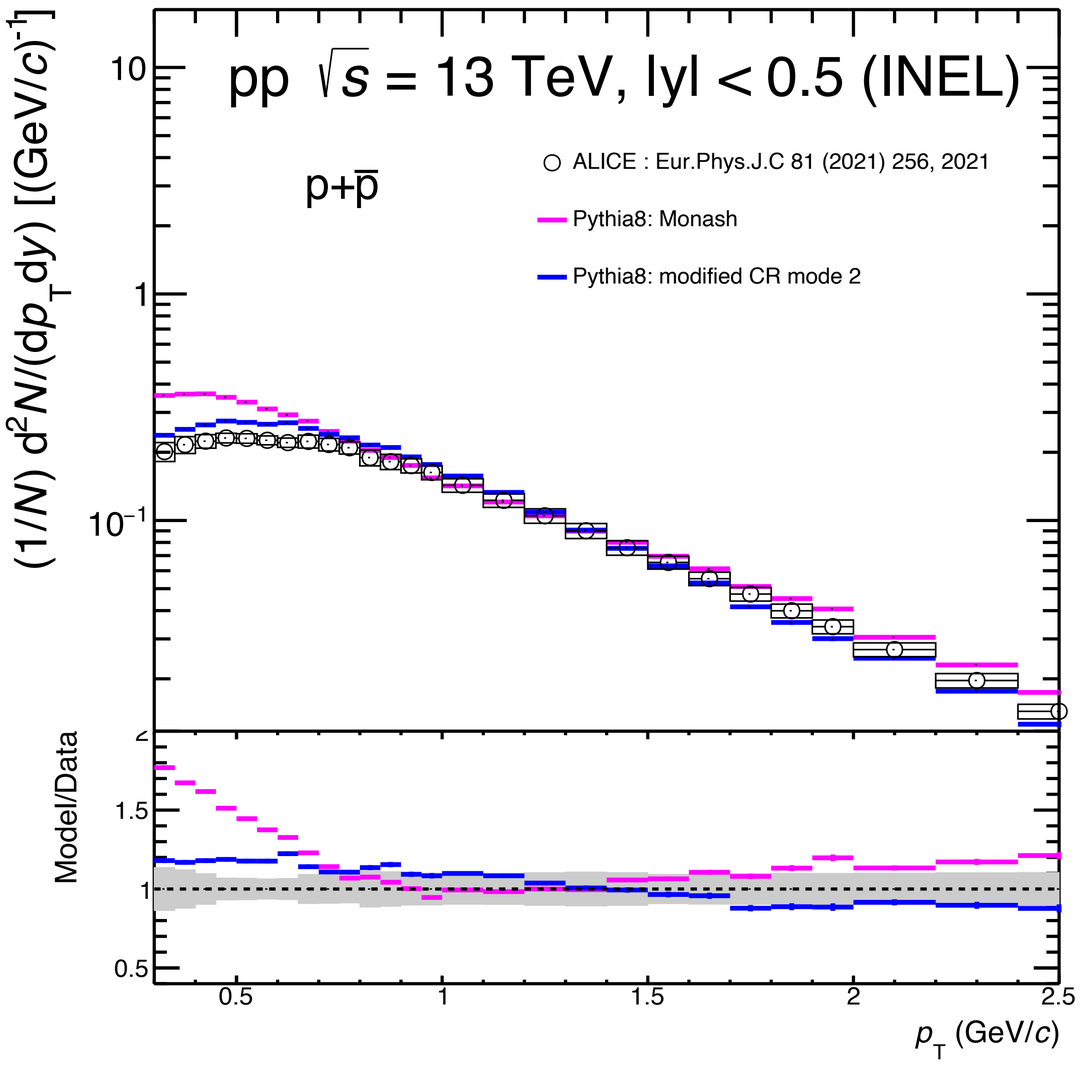
Min. Value of χ^2 at $N_{ch}^{V0M} > 157$ (0.005% of MB)

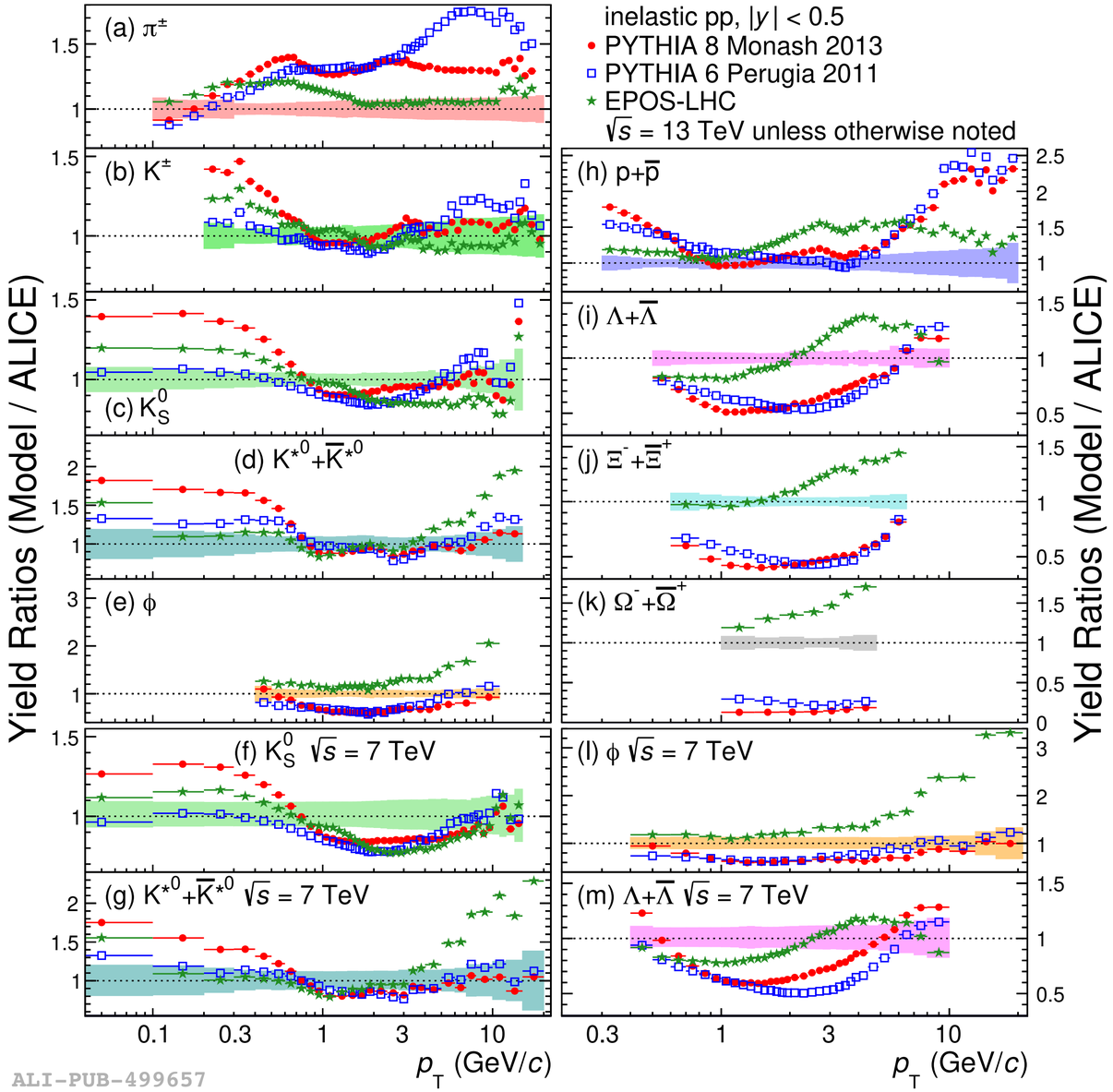
Comparison with ALICE data (Proton spectrum - HM I)



More event generation ongoing

Comparison with ALICE data (Proton spectrum - INEL)





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