

Status Weekly Ξ^0_c analysis meeting, Nov. 25, 2021, CKim

- **Status & Plan**

- xCheck with Jinjoo finished (Nov. 26)

- a. [Temporary repository](#) (results, used codes, etc)

- b. Checked items:

- b-1. Cuts (in *Xi0cAnaMakeRoot.C*) and Parameters (e.g., Xic0 -> eXi BR, etc)

- b-2. Inclusive xSec (no prompt fraction applied)

- c. Conditions:

- c-1. MB (no percentile cut), New pileup cut (MV) applied,

- New normalization factor (saving point of *AliNormalizationCounter* updated)

- c-1. Same parameters, but “NOT exactly same” code (starting from the *Xi0cAnaMakeRoot.C*)

- c-2. Some cuts / parameters (e.g., MC weighting factor) can be changed later for finalize

- **Items in this report**

- a. xCheck result (inclusive xSec and ratio)

- b. My own results afterwards (Corrected yields w/ INEL>0 applied, Xic0/D0 ratio)

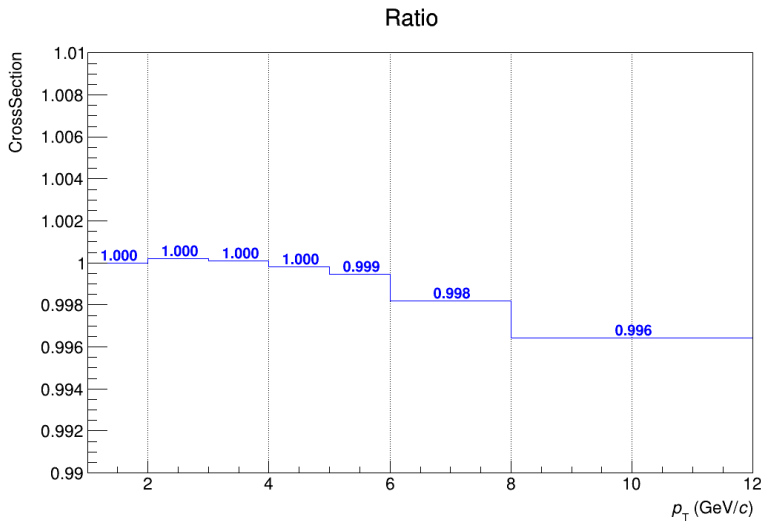
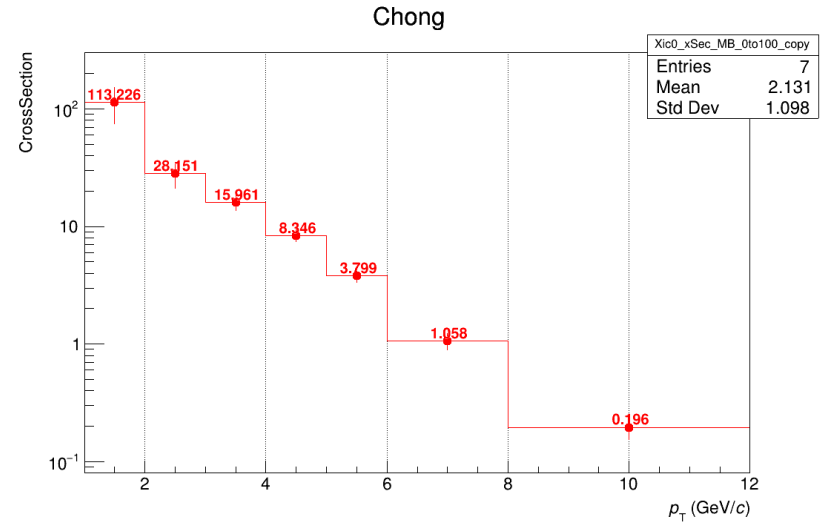
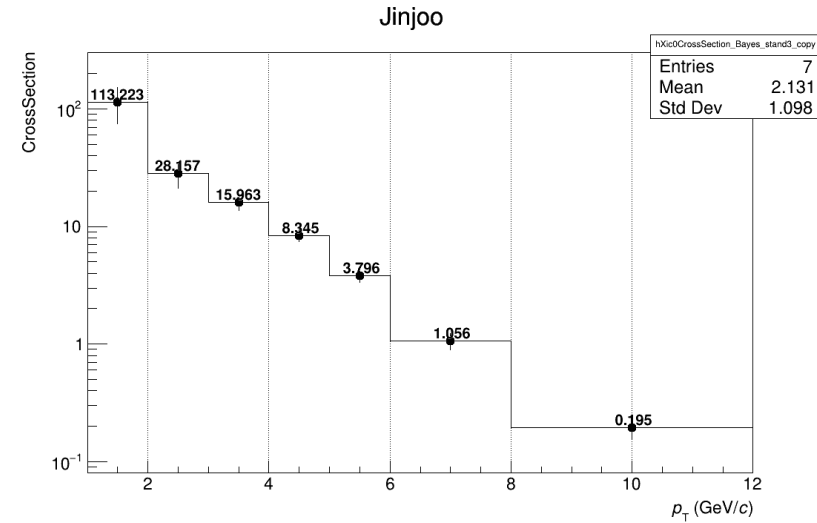
- **Plan**

- a. Update to D2H (after ALICE physics week, plan to do it at least twice)

- b. Start analysis note writing (I need to finish the draft before Dec. 25-ish...)

xCheck results

Inclusive xSec (Jinjo and Chong)



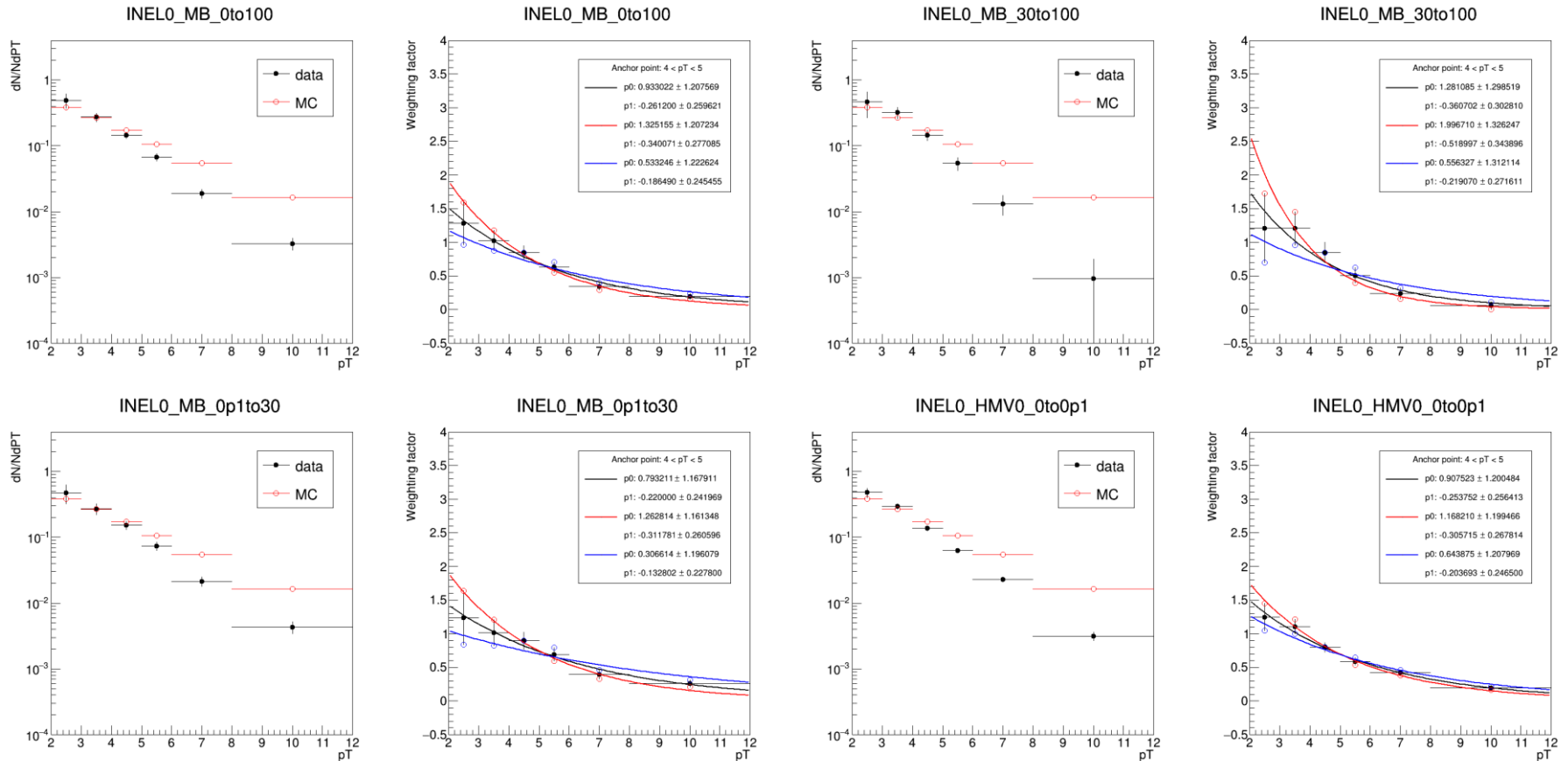
— Conditions

- Nov. train (new pileup cut, new norm. factor)
- MB + no multiplicity percentile cut
- Inclusive xSec (no prompt fraction corrected)

— Possible source of difference:

I applied year by year weighting on norm. factor
(e.g., $\text{Frac}_{2016} \times \text{VOxSec}_{2016} + \dots$)

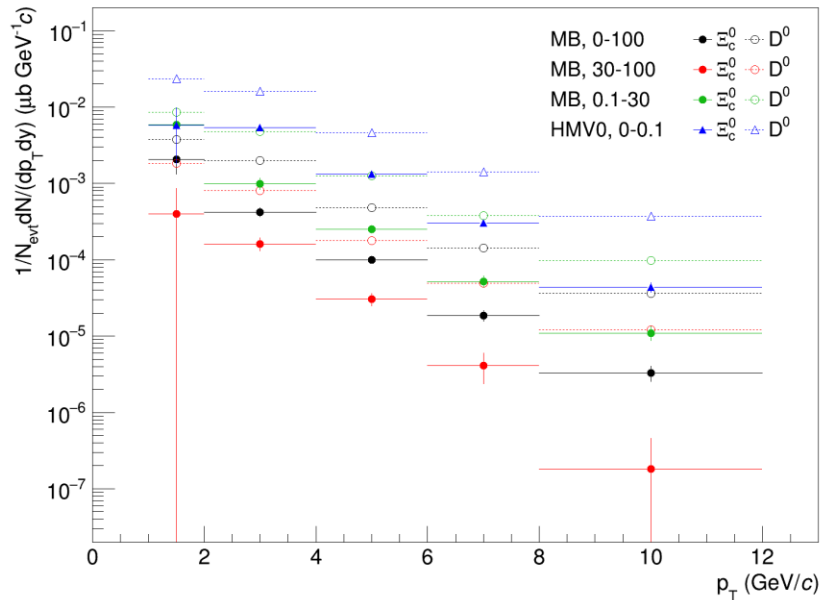
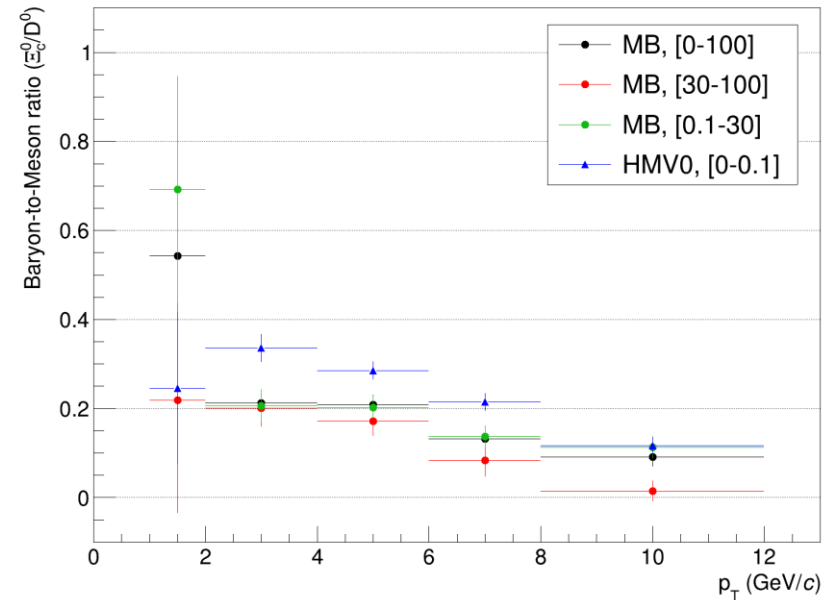
Tricky pT weighting



- Obtained by using data and MC w/o weighting factor
- Fit with “expo” on $2 < p_T < 12$ is rather easy, but it’s very tricky when $1 < p_T < 2$ being included

New results INEL>0 applied corrected yields, X_{c0}/D^0 ratio

Corrected yields per event, pp 13 TeV

Ratio (Ξ_c^0/D^0), pp 13 TeV

Corrected yields

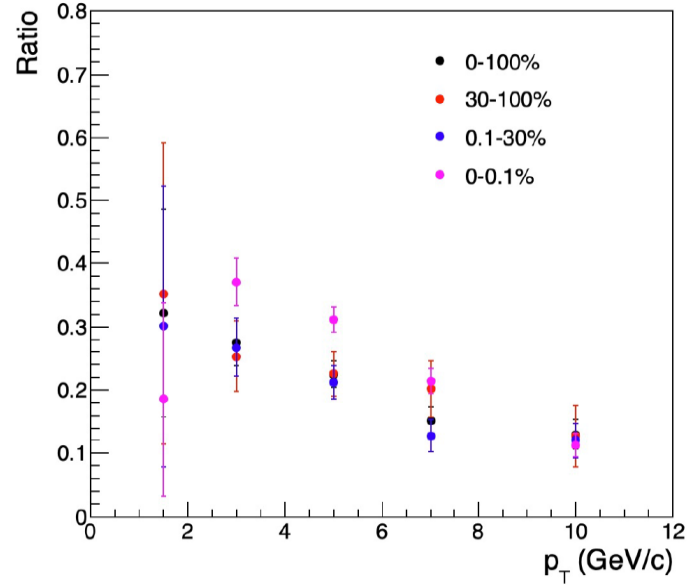
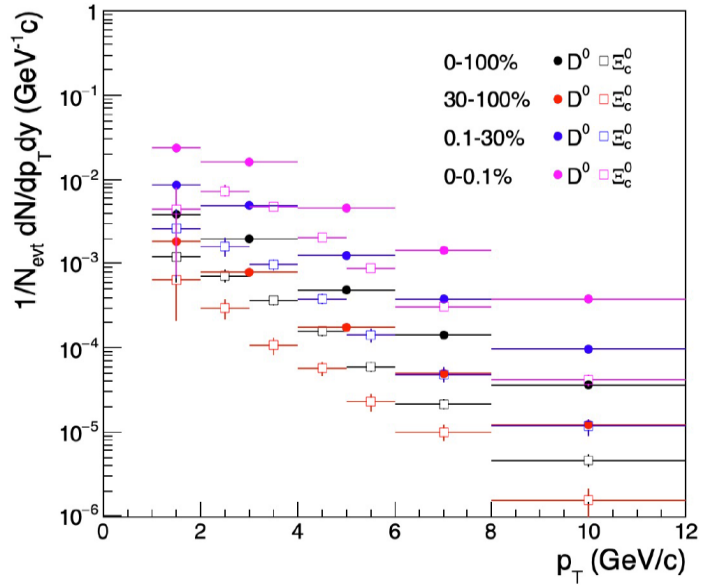
- No normalization by V0 xSec (only # of events by *AliNormalizationCounter*)
- INEL>0 condition applied
- Binning match to directly compare w/ D^0 results (from C. Terrevoli)

Problems

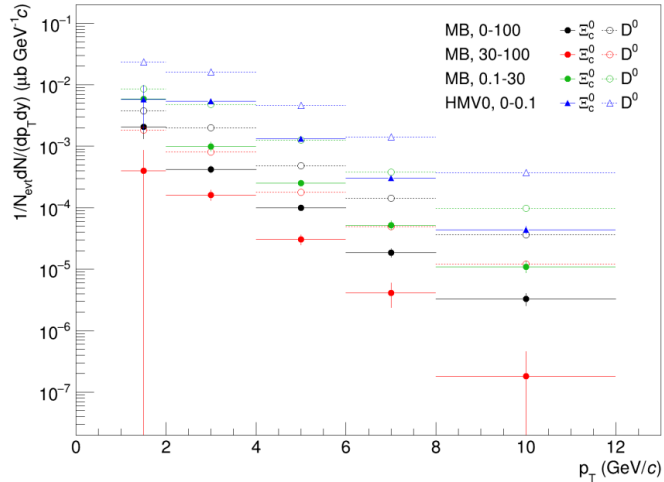
- In general points are more fluctuating compared to last train results (e.g., MB [30, 100] \rightarrow $1 < p_T < 2$)
- Maybe further tune (on cut or MC weighting factors will be needed...)

New results

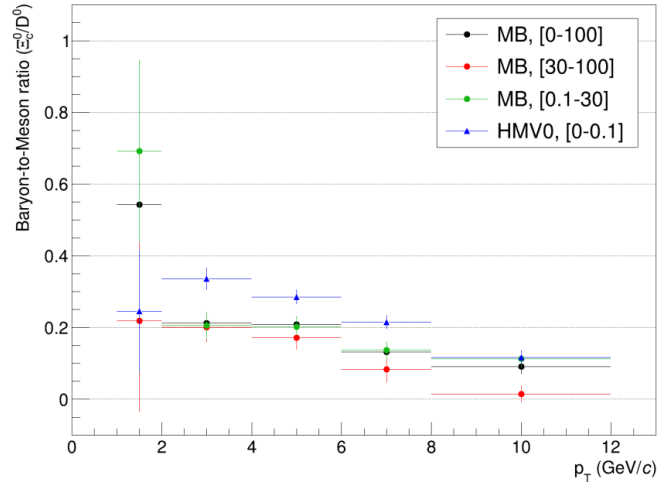
Previous results (by SHLim at April) and New results



Corrected yields per event, pp 13 TeV



Ratio (Ξ_c^0/D^0), pp 13 TeV



LAST SLIDE

Backup # of events by ANC (normalization factor)

- # of events by *ANC*->*GetNEventsForNorm()*

- MB + [0, 100]

- a. Normal (no INEL>0): 1.794 x 1.e9 / Frac: 0.261 (2016), 0.340 (2017), 0.399 (2018) / Weighted V0 xSec: 57.957
- b. INEL>0: 1.691 x 1.e9 / Frac: 0.262 (2016), 0.340 (2017), 0.398 (2018) / Weighted V0 xSec: 57.958
 (* |1.691 - 1.794|/1.794 = 0.057)

- MB + [0.1, 30]

- a. Normal (no INEL>0): 0.502 x 1.e9 / Frac: 0.262 (2016), 0.341 (2017), 0.397 (2018) / Weighted V0 xSec: 57.958
- b. INEL>0: 0.501 x 1.e9 / Frac: 0.262 (2016), 0.341 (2017), 0.398 (2018) / Weighted V0 xSec: 57.958

- MB + [30, 100]

- a. Normal (no INEL>0): 1.287 x 1.e9 / Frac: 0.260 (2016), 0.339 (2017), 0.400 (2018) / Weighted V0 xSec: 57.956
- b. INEL>0: 1.188 x 1.e9 / Frac: 0.262 (2016), 0.340 (2017), 0.398 (2018) / Weighted V0 xSec: 57.958

- HMV0 + [0, 0.1]:

- a. Normal (no INEL>0): 0.499 x 1.e9 / Frac: 0.292 (2016), 0.385 (2017), 0.324 (2018) / Weighted V0 xSec: 58.012
- b. INEL>0: 0.499 x 1.e9 / Frac: 0.292 (2016), 0.385 (2017), 0.324 (2018) / Weighted V0 xSec: 58.012

Backup Previous results by SHLim (April)

