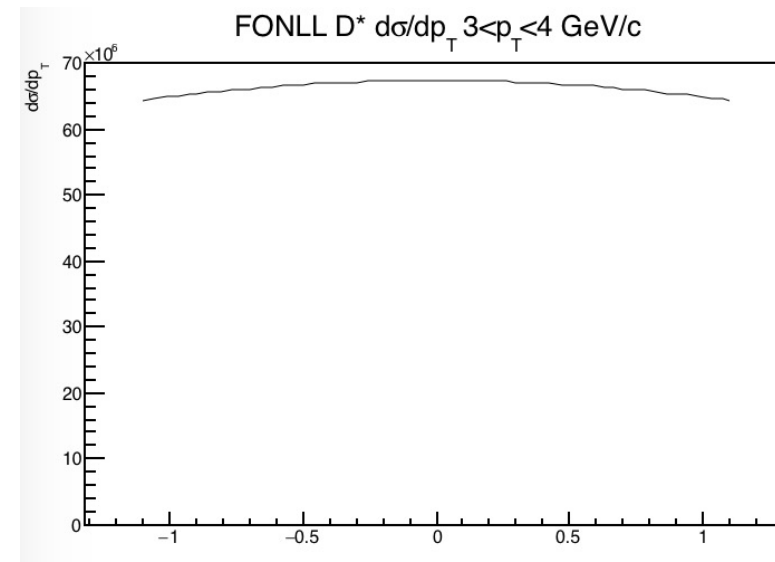
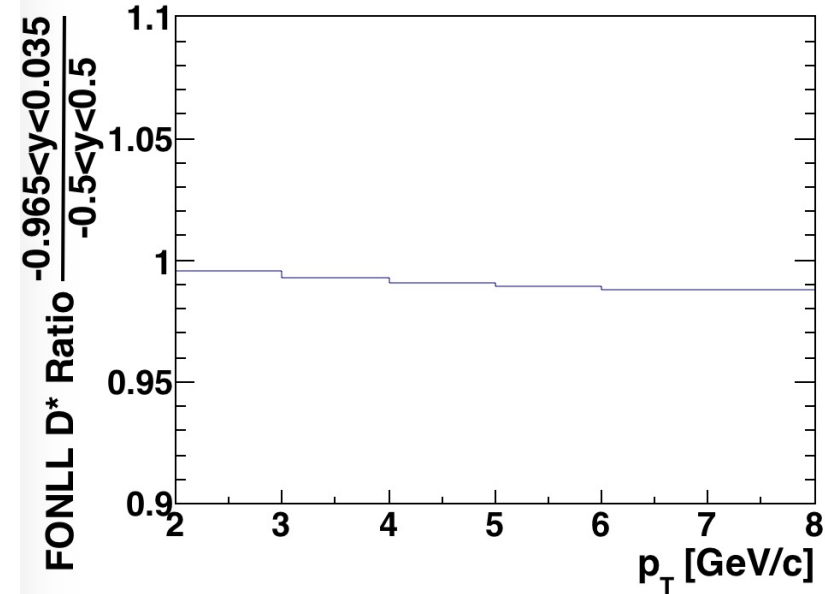
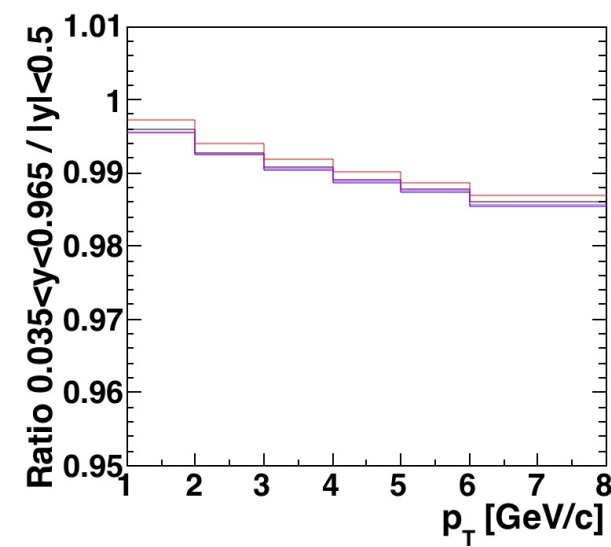
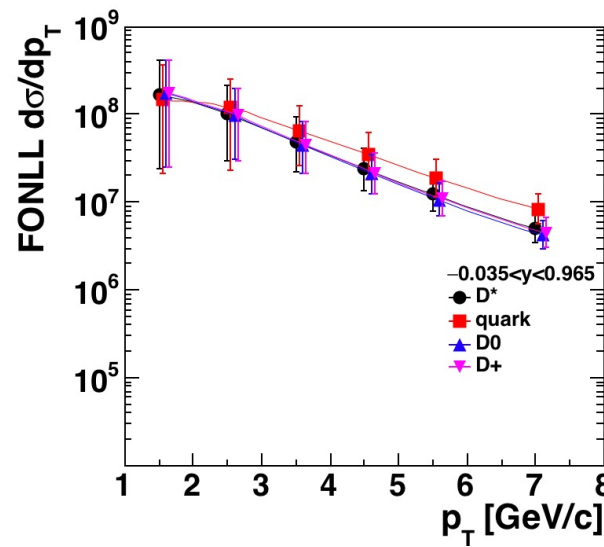
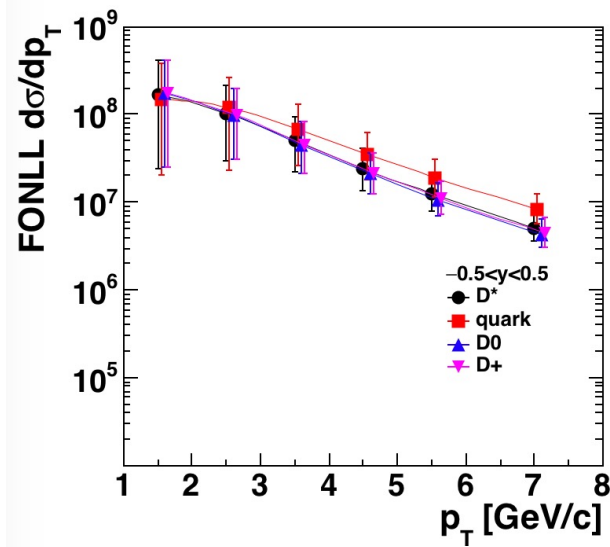


- FONLL rapidity ratio
 - Following Lc analysis <https://alice-notes.web.cern.ch/node/811>
 - pPb: $-0.5 < y_{lab} < 0.5 \rightarrow (y_{cms} = -y_{rap} - 0.465) \rightarrow -0.965 < y_{cms} < 0.035$
 - Points at $p_T = (1.5, 2.5, 3.5, 4.5, 5.5, 7)$
 - Uncertainty not applied yet. D^* Central value only today.
 - In Lc analysis, uncertainty was D^0 , D^+ FONLL points

$$\frac{d\sigma^{-0.965 < y < 0.035} / dp_T}{d\sigma^{-0.5 < y < 0.5} / dp_T}$$



$d\sigma/dy$ almost flat



- In Lc note:
 - renormalization scale, factorization scale PDF uncertainties, quark mass
- In the FONLL result,
 - Renormalization scale?

```
# Uncertainties from scales, masses combined quadratically
# cross section is ds/dpt (pb/GeV)
# pt      central      min      max      min_sc      max_sc      min_mass      max_mass
1.5000  1.7006e+08  2.4161e+07  4.0869e+08  2.9710e+07  4.0243e+08  1.3021e+08  2.2438e+08
2.5000  1.0301e+08  2.9818e+07  2.1317e+08  3.3135e+07  2.0894e+08  8.1221e+07  1.3322e+08
```

renormalisation scale, factorisation scale PDF uncertainties and quark mass are varied within the recommended uncertainties, and the variations are used in the envelope of the uncertainties. This approach is similar to the energy scaling of the pp cross section for the run 1 result [21]. Figure 96 shows this scaling factor as a function of p_T . The scaling factor is small and below unity, and reduces the pp cross section by less than 1% at low p_T to around 2% at high p_T .

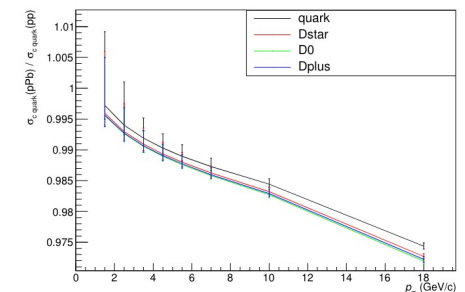
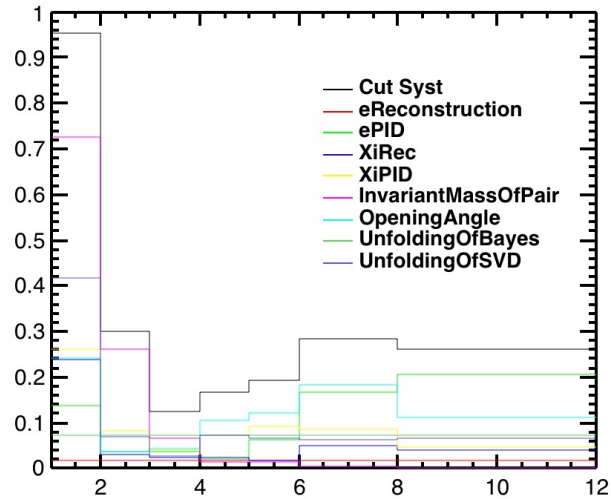
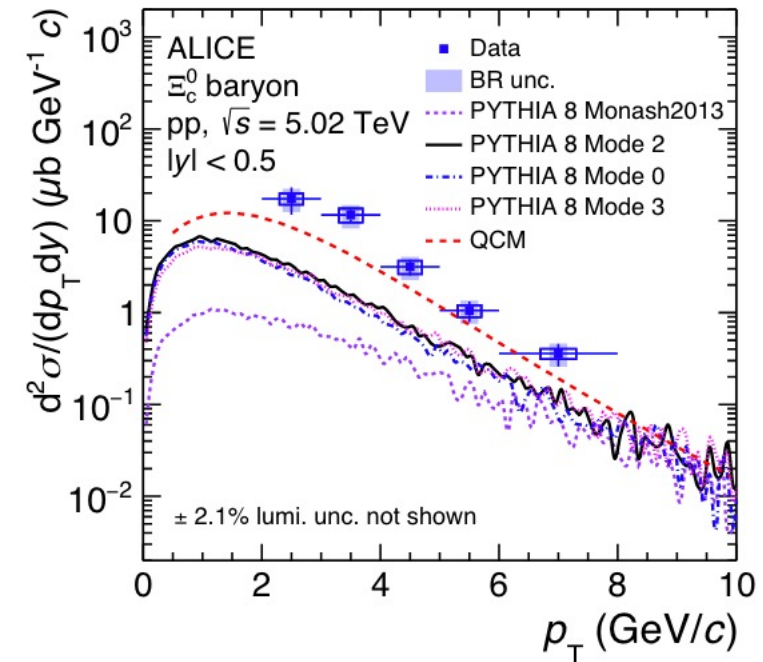
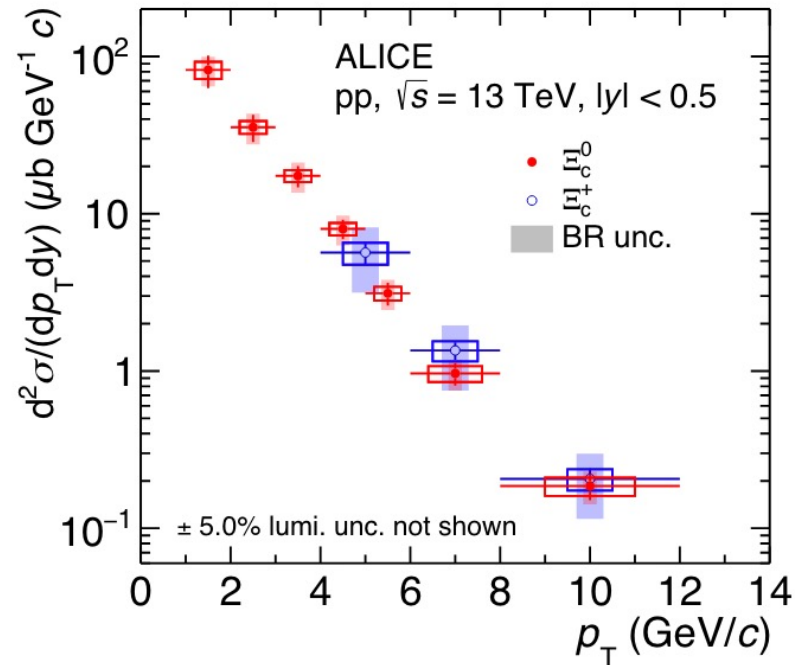
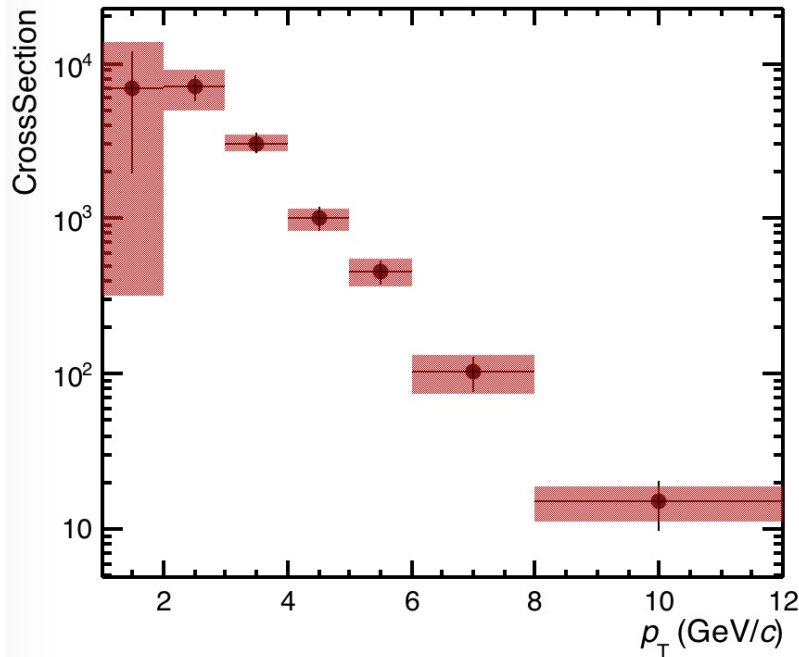


Fig. 96: The ratio of cross sections of D mesons and the c-quark in FONLL in different rapidity regions, $\frac{d\sigma^{-0.96 < y < 0.04} / dp_T}{d\sigma^{|y| < 0.5} / dp_T}$, as a function of p_T . The uncertainties are the envelope of the variations of the renormalisation scale, factorisation scale PDF uncertainties and quark mass.

For the propagation of the uncertainties, the statistical uncertainties are uncorrelated between collision systems and are summed in quadrature. Systematic uncertainties that are uncorrelated between collision systems are also summed in quadrature. These include the cut variation systematic, the raw yield extraction systematic, the PID systematic and the tracking systematic. The feed-down is partially correlated, and the uncertainty is estimated from the envelope of the R_{pPb} when the feed-down is changed in both collision systems between its minimum and maximum values. This source is added in quadrature with the other systematic sources. The pp scaling uncertainty is added in quadrature with the aforementioned sources.



- cut, unfolding만 포함.
- Cut study 필요. (mass 등)
- Remaining things
 - Weighting, BottomBaryon, ITS TPC Matching, Rapidity Range ...



- Inclusive D0
- Stat.uncertainty only
- Peak around 3GeV/c

