

# Preliminary D/p ratio

Tyler Kutz

August 2, 2018

# Extraction

Method of extracting normalized yield for each  $x_{Bj}$  bin:

$$Y^{bin} = \frac{\sum_i \left( \frac{N_{det}^{bin}}{LT} \right)_i \times (C_{EC}^{bin})_i \times (C_{e^+})_i}{\sum_i (N_e \times N_{tg})_i} \times C_{rad}^{bin}$$

with sum over run or current region  $i$

- Similar approach to Hanjie
- Independent analysis code
  - Use as cross-check
- Goal to make code as generalized as possible

# Cuts

Yield cuts:

- Trigger (T2 for LHRS, T5 for RHRS)
- $n_{tr} = 1$
- $|\theta| < 0.06$
- $|\phi| < 0.03$
- $|\delta p| < 0.04$
- $|z_v| < 0.1$  m
- Cherenkov  $> 1600$
- $E/p > 0.75$
- $\beta > 0.01$

Lifetime cut:

- $I > 3 \mu\text{A}$

# Corrections and errors

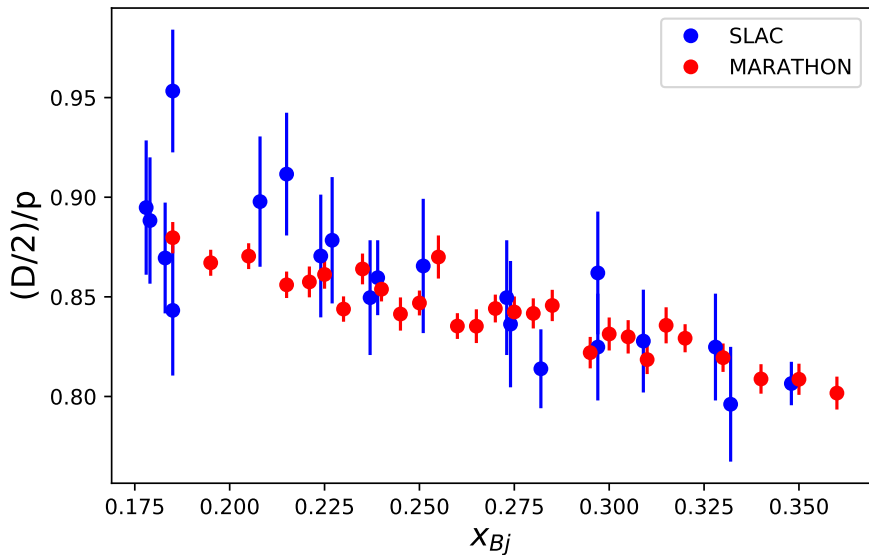
Corrections applied:

- Target boiling (Nathaly)
- Positron (Tong)
- Endcap (Tong)
- Radiative (Hanjie)

Errors included:

- Statistical error in detected electrons (run by run)
- Statistical error in livetime (naive calculation)
- Systematic error target thickness

# Results



## Next steps

- Bin-by-bin calculation of  $N_{det}$  (instead of run-by-run)
- More rigorous treatment of all errors
- Fix multiple-current run bug