

# Heavy Flavor Physics with Single Muons

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## Main Results:

- 1) Open heavy flavor production with semileptonic decay at  $p_T > 2 \text{ GeV}$  competes favorably with  $\pi$  and  $K$  decay muons
- 2) Shifted distribution of decay vertices of  $\pi$  and  $K$  decay muons permits statistical subtraction of background to prompt muon signal
- 3)  $J/\psi$  and Drell-Yan single muons less important than those from heavy flavor ( $D$  and  $B$ ) decay

Triggering is easy and count rate is high for single high  $p_T$  muons so this measurement is possible even at low luminosity

Consequences for Gluon Shadowing + Gluon Polarization