

Ratio to nominal

1.3

**STAR**

$p+p \rightarrow p' + \pi^+ \pi^- + p'$   $\sqrt{s} = 200$  GeV

$\pi^+, \pi^-$ :

$p_T > 0.2$  GeV

$|\eta| < 0.7$

$m(\pi^+ \pi^-) > 1.5$  GeV

$p'$ :  $(p_x + 0.3 \text{ GeV})^2 + p_y^2 < 0.25 \text{ GeV}^2$

$0.2 \text{ GeV} < |p_y| < 0.4 \text{ GeV}$

$p_x > -0.2 \text{ GeV}$

1.2

1.1

1

0.9

-1

-0.5

0

0.5

1

$\cos \theta^{\text{GJ}}(\pi^+)$

$\Delta \epsilon_{\text{TPC}}$  (embed. stat.)

$\Delta \epsilon_{\text{TPC}}$  (dead mat.)

$\Delta \epsilon_{\text{RP}}$

$\Delta \epsilon_{\text{RP}}$

$\Delta \epsilon_{\text{veto}}$

$\Delta \sigma(z_{\text{vtx}})$

$\Delta \text{Luminosity}$

$\Delta \epsilon_{\text{TPC}}$  (pile-up)

$\Delta \epsilon_{\text{TOF}}$

$\Delta \epsilon_{\text{DM veto}}$

$\Delta \epsilon_{\text{RP}}$

$\Delta \epsilon_{\text{vtx}}$

$\Delta \langle z \rangle_{\text{vtx}}$

$\Delta N_{\text{bkgd}}^{\text{non-excl}}$

Total (w/o lumi.)

Total (w/ lumi.)