

Ratio to nominal

STAR

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

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

$p_T > 0.2$ GeV

$|\eta| < 0.7$

$1.0 \text{ GeV} < m(\pi^+ \pi^-) < 1.5 \text{ GeV}$

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

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

$p_x > -0.2 \text{ GeV}$

1.3

1.2

1.1

1

0.9

-1

-0.5

0

0.5

1

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

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

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

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

$\epsilon_{\text{TOF}} \uparrow$

$\epsilon_{\text{RP}} \uparrow$

$\langle Z_{\text{vtx}} \rangle \uparrow$

$\sigma(Z_{\text{vtx}}) \uparrow$

Luminosity \uparrow

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

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

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

$\epsilon_{\text{TOF}} \downarrow$

$\epsilon_{\text{RP}} \downarrow$

$\langle Z_{\text{vtx}} \rangle \downarrow$

$\sigma(Z_{\text{vtx}}) \downarrow$

Luminosity \downarrow

Total (w/o lumi.)

Total (w/ lumi.)