

Ratio to nominal

1.3

**STAR**

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

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

$p_T > 0.2$  GeV

$|\eta| < 0.7$

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

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

$p_x > -0.2 \text{ GeV}$

1.2

1.1

1

0.9

-180

-120

-60

0

60

120

180

$\phi^{GJ}(\pi^+)$

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