

**STAR** $p+p \rightarrow p' + \pi^+ \pi^- + p' \quad \sqrt{s} = 200 \text{ GeV}$  $\pi^+, \pi^-:$  $p_T > 0.2 \text{ GeV}$  $|\eta| < 0.7$  $p': (p_x + 0.3 \text{ GeV})^2 + p_y^2 < 0.25 \text{ GeV}^2$  $0.2 \text{ GeV} < |p_y| < 0.4 \text{ GeV}$  $p_x > -0.2 \text{ GeV}$ 

Ratio to nominal

2  
1.5  
1

0.1

0.15

0.2

0.25

0.3

0.35

 $|t_1 + t_2| [\text{GeV}^2]$  $\epsilon_{\text{TPC}} \uparrow$  (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.)

