$\sqrt{s_{\rm NN}}$ =
$_{U}se/VpdVz.pngAuAu200GeV$
$|V_z| <$
$Vr <$
$2cm$
$|Vz^{VPD} -$
$Vz^{TPC}| <$
$3cm$
$|V_z| <$
$6.0cm|V_z| <$
$30.0cm$**??**$|V_z^{VPD} -$
$V_z^{TPC}| <$
3.0
??
$\sqrt{s}_{NN}|V_z|V_r|V_z^{VPD} - V_z^{TPC}|$
$< < <$
(GeV)
d_{ca} $|\eta| < 1.0$ **TPC**
$|n\sigma_p|$
$0.2 < p_T < 2.0$ **TPC+TOF**
$|n\sigma_p| - 0.01 < m^2 < 0.1 (\mathrm{GeV}^2/c^2)$
d_{ca}
$n\sigma$**?**
$\pi^+\pi^-$
$|n\sigma_\pi| <$
3.0
$0.017 -$
$0.013 \times$
$p <$
$m^2 <$
$0.04 \mathrm{GeV}/c$
$\pi^+_-\pi^-$
$p\overline{p}$
$|n\sigma_p| <$
3.0
$0.5 <$
$m^2 <$
$1.5 \mathrm{GeV}/c$
$p\overline{p}$
?? $\sqrt{s}_{NN}\pi Kp$
$_{2}00.pdf\sqrt{s}_{NN}dEdxp/q$
$_{2}00.pdf\sqrt{s}_{NN}m^2$
p/q

?
?
?
$|y| <$
0.5
$_{v}s_{y}showstheionizationenergyloss()distributionsmeasuredbySTARTPCinAu+$
$Aucollisionsat =$
$39GeV.Itwasfoundthatathigherrange, protonsandkaonscannotbeidentifiedclearlybecauseofmergedbands.Theleftupperpa$
$Aucollisionsat =$
$39GeV.Wecanusemasssquarecuttoselectprotonsandkaonswithinhighmomentumrange.So, Inordertomaximizethepurityan$
$thelowerrange()withTPC, andthehigherrange()withbothTPCandTOF.Therightpanelof Fig: pT_{v}s_{y}showsthephaseacceptan$
$correlation.Afterparticleidentification, wecangetthepurityoftheprotonandanti-$
$proton.$
Q_n
Q_n
Q_n**?**
?

$$Q_{\mathbf{n},x} = \sum_i^{16} \omega_i \cos(n\varphi_i) \quad (1)$$

$$Q_{\mathbf{n},y} = \sum_i^{16} \omega_i \sin(n\varphi_i) \quad (2)$$

φ_i**??**
ω_i

$$\omega_i = \frac{ADC_i}{\sum_{i=1}^{i=16} ADC_i} \quad (3)$$