

3rd Production Cuts in MuKpi

Event Level:

Trigger Ids: **200001, 200003, 200013**

Primary vertex position along the beam axis : **$|z_{\text{vertex}}| < 10 \text{ cm}$**

Resolution of the primary vertex position along the beam axis:

$|\sigma_{z_{\text{vertex}}}| < 200 \mu\text{m}$

Selects the best vertex only (**highest ranking**)

Track Level:

momentum of tracks, **$p_{\text{K+pPi}} > 1.5 \text{ GeV}/c$**

Pseudo-rapidity : **$|\eta| < 1.2$**

Tpc Hits fitted > 25

Ratio TPC hits Fitted/Possible > 0.51

dEdxTrackLength > 40 cm

Number of Hits in SSD+SVT: **SiliconHits > 1**

Radius of first hit on track :

< 9 cm if number of silicon hits = 2

< 13 cm else

SvtHits < 4, SsdHits < 2

DCA to Primary vertex (transverse), **$\text{DCA}_{xy} < .2 \text{ cm}$**

Particle ID : ndEdx : **$|n\sigma_{\text{K}}| < 2.5, |n\sigma_{\pi}| < 2.5$**

D0 candidate Level:

Rapidity of D^0 : **$|y(D^0)| < 1$**

Kaon opening angle in the CM frame: **$|\cos(\theta^*)| < 0.8$** (started at run number 8163023, before that it was set to 1.0)

$1.2 < \text{Mass}_{D^0} < 2.2$

Decay Fit Level:

Probability of fit > 0.05

signed decay length: **$|s\text{Length}| < .2 \text{ cm}$**

error of decay length: **$d\text{sLength} < 0.1$**

3rd Production pico cuts

Track Level

Silicon Hits (SVT+SSD) : **SiHits>2**

dE/dx : **$|n\sigma_K| < 2$, $|n\sigma_\pi| < 2$**

Transverse DCA: **$|DCA_{XY}| < 0.1\text{cm}$**

D0 Level

Eta of D⁰ : **$|\eta_{D^0}| < 1.85$**

Rapidity of D⁰: **$|y_{D^0}| < 0.5$**

Kaon opening Angle in the CM Frame: **$|\text{Cos}(\theta^*)| < 0.6$**

Fit Level

probability of fit > 0.1