

Variable	Requirement
Downstream-track selection	
Each $\pi$ -track momentum	$> 2 \text{ GeV}/c$
Each $\pi$ -track transverse momentum	$> 0.05 \text{ GeV}/c$
Each track fit $\chi^2/\text{ndf}$	$< 25$
Distance of closest approach of each $\pi$ -track to the $z$ axis	$> 3 \text{ mm}$
$K_S^0$ decay vertex fit $\chi^2/\text{ndf}$	$< 25$
$z$ of $K_S^0$ decay vertex	$< 2200 \text{ mm}$
$ z $ of pseudo-PV	$< 150 \text{ mm}$
$\cos \theta_{\text{pointing}}$	$> 0.99995$
$K_S^0$ proper time ( $c\tau$ )	$> 5 \text{ mm}$
Long-track selection	
$ z $ of associated PV	$< 200 \text{ mm}$
Each track fit $\chi^2/\text{ndf}$	$< 25$
$K_S^0$ decay vertex $\chi^2/\text{ndf}$	$< 100$
$z(K_S^0) - z(\text{PV})$	$> 0 \text{ mm}$
Variable $\nu$ related to impact parameters	$> 2$