0.1 Cascade Reconstruction

A description of our ΞK^{\pm} analyses, as well as preliminary results and fits are expected to be uploaded by 16 December 2016.

Our motivation for studying ΞK^{\pm} systems is to hopefully better understand the striking difference in the ΛK^{+} and ΛK^{-} data at low k^{*} (Figure ??).

The reconstruction of Ξ particles is one step above V0 reconstruction. V0 particles are topologically reconstructed by searching for the charged daughters' tracks into which they decay. With Ξ particles, we search for the V0 particle and charged daughter into which the Ξ decays. In the case of Ξ^- , we search for the Λ (V0) and π^- (track) daughters. We will refer to this π as the "bachelor π ". The reconstruction of Ξ , and the specific cuts used will be included in future versions of this note.

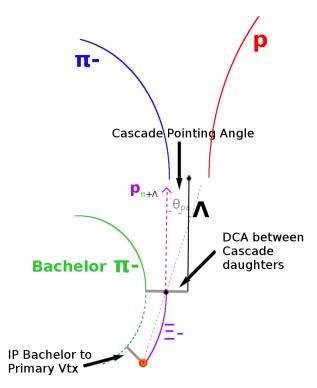


Fig. 1: Ξ Reconstruction

The purity of our Ξ and $\bar{\Xi}$ collections are calculated just as those of our V0 collections ??. Figure 2, which is used to calculate the purity, shows the m_{inv} distribution of our $\Xi(\bar{\Xi})$ candidates just before the final m_{inv} cut. Currently, we have Purity(Ξ^-) $\approx 81\%$ and Purity($\bar{\Xi}^+$) $\approx 86\%$.

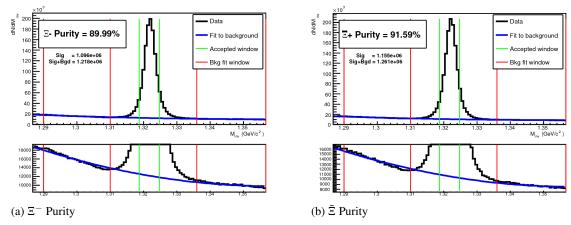


Fig. 2: $\Xi^-(\bar{\Xi}^+)$ Purity 0-10%: Purity(Ξ^-) $\approx 90\%$ and Purity($\bar{\Xi}^+$) $\approx 92\%$.