## 0.1 Typical Correlation Function Construction

Typically, in practice, $B(k^*)$ is obtained by forming mixed-event pairs, i.e. particles from a given event are paired with particles from $N_{mix}(=5)$ other events, and these pairs are then binned in k^*. In forming the background distribution, it is important to mix only similar events; mixing events with different phase-spaces can lead to artificial signals in the correlaton function. Therefore, in this analysis, we mix events with primary vertices within 2 cm and centralities within 5% of each other. Also note, a vertex correction is also applied to each event, which essentially recenters the the primary vertices to z = 0.

Figures 1a, 1b, 1c show the correlation functions for all centalities studied for $\Lambda K^+(\bar{\Lambda}K^-)$, $\Lambda K^-(\bar{\Lambda}K^+)$, and $\Lambda(\bar{\Lambda})K_S^0$, respectively. All were normalized in the range $0.32 < k^* < 0.4$ GeV/c.
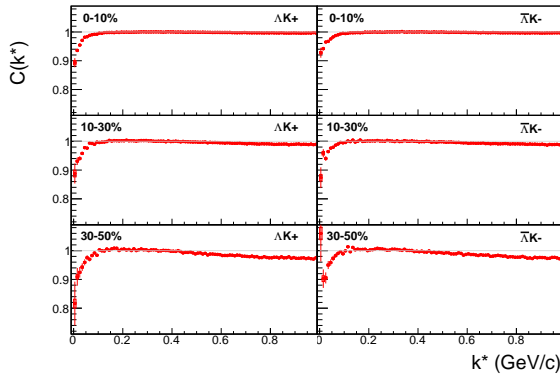
(a) ΛK^+ (left) and $\bar{\Lambda}K^-$ (right) correlations for 0-10% (top), 10-30%(middle), and 30-50%(bottom) centralities.
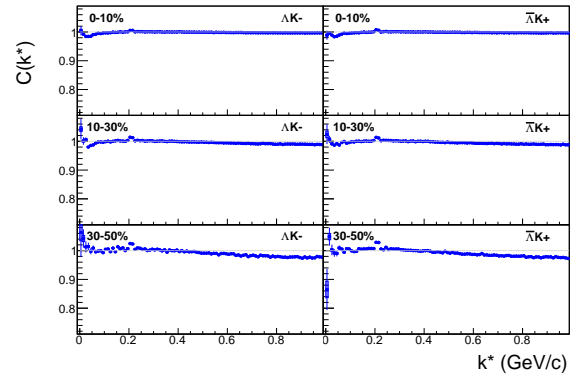
(b) ΛK^- (left) and $\bar{\Lambda}K^+$ (right) correlations for 0-10% (top), 10-30%(middle), and 30-50%(bottom) centralities. The peak at k* $\approx$ 0.2 GeV/c is due to the Ω^- resonance.
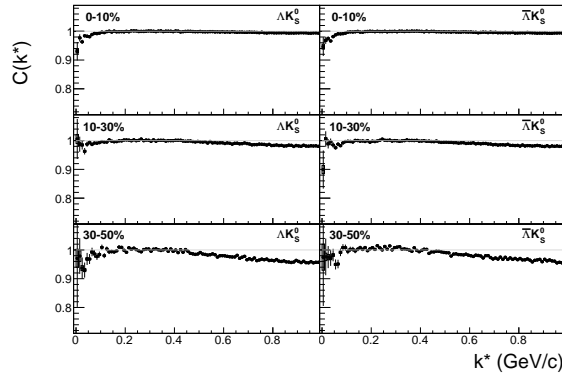
(c) ΛK_S^0 (left) and $\bar{\Lambda}K_S^0$ (right) correlations for 0-10% (top), 10-30%(middle), and 30-50%(bottom) centralities.

Fig. 1: ΛK and $\bar{\Lambda}\bar{K}$ correlation functions for 0-10%, 10-30%, and 30-50% centralities. The lines represent the statistical errors, while the boxes represent the systematic errors.
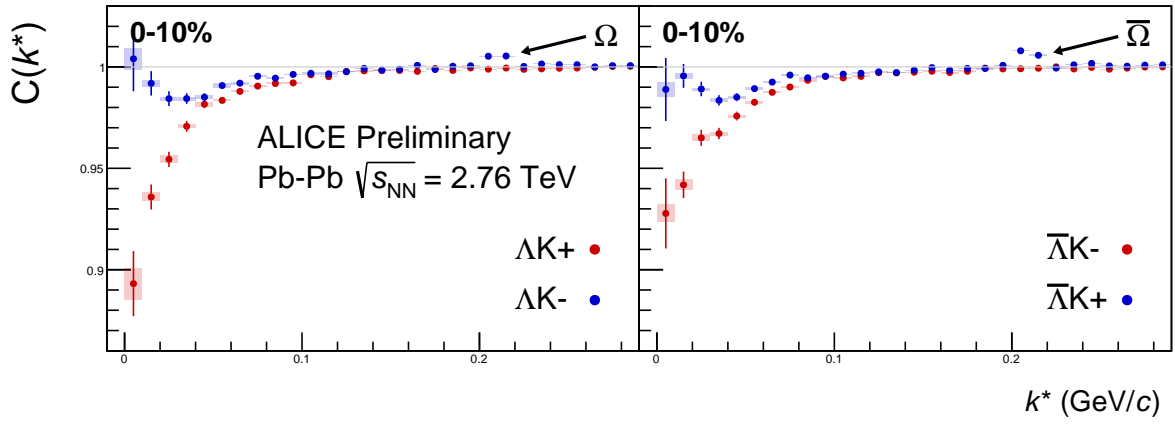
Fig. 2: Correlation Functions: ΛK^+ vs ΛK^- ($\bar{\Lambda} K^+$ vs $\bar{\Lambda} K^-$) for 0-10% centrality. The peak in ΛK^- ($\bar{\Lambda} K^+$) at k* ≈ 0.2 GeV/c is due to the Ω^- resonance. The lines represent the statistical errors. (NOTE: This figure is slightly dated, and a new one will be generated which includes both statistical and systematic uncertainties)