1 Results and Discussion

1.1 Results: ΛK^0_S and $\Lambda K^{\pm}$

Figures 1, 2, and 3 (Section 1) show experimental data with fits for all studied centralities for ΛK^0_S with $\bar{\Lambda} K^0_S$, ΛK^+ with $\bar{\Lambda} K^-$, and ΛK^- with $\bar{\Lambda} K^+$, respectively. The parameter sets extracted from the fits can be found in Tables 1 and 2. In the figures, the black solid line represents the "raw" fit, i.e. not corrected for momentum resolution effects nor non-flat background. The green line shows the fit to the non-flat background. The purple points show the fit after momentum resolution and non-flat background corrections have been applied. The initial values of the parameters is listed, as well as the final fit values with uncertainties.

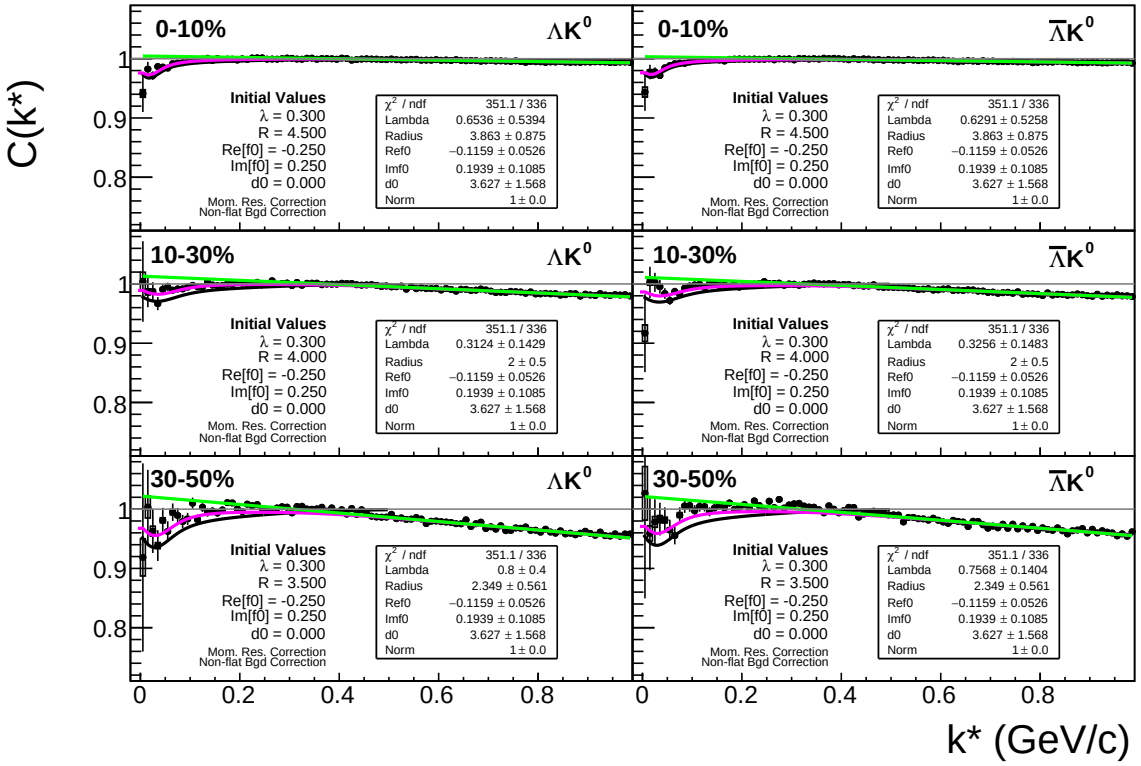

Fig. 1: Fits to the ΛK^0_S (left) and $\bar{\Lambda} K^0_S$ (right) data for the centralities 0-10% (top), 10-30% (middle), and 30-50% (bottom). Each has unique λ and normalization parameters. The radii are shared amongst like centralities; the scattering parameters ($\mathbb{R}f_0$, $\mathbb{I}f_0$, d_0) are shared amongst all. The black solid line represents the "raw" fit, i.e. not corrected for momentum resolution effects nor non-flat background. The green line shows the fit to the non-flat background. The purple points show the fit after momentum resolution and non-flat background corrections have been applied. The initial values of the parameters is listed, as well as the final fit values with uncertainties.

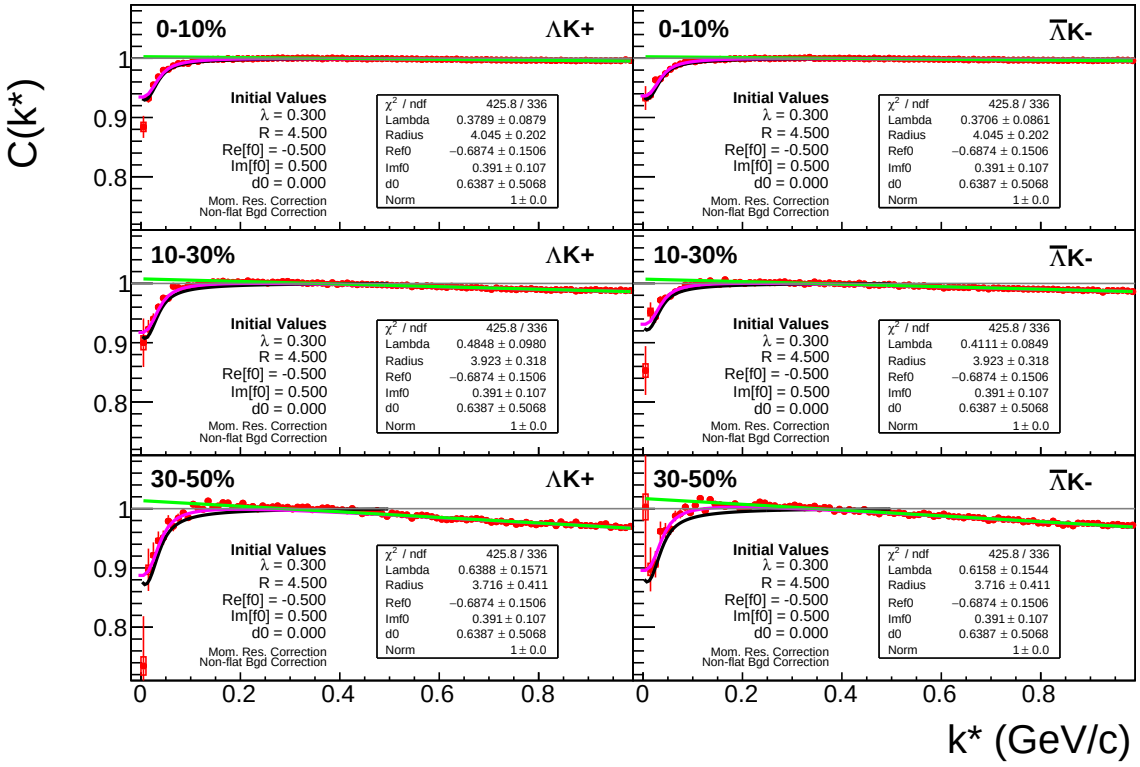

Fig. 2: Fits to the ΛK^+ (left) and $\bar{\Lambda}K^-$ (right) data for the centralities 0-10% (top), 10-30% (middle), and 30-50% (bottom). Each has unique λ and normalization parameters. The radii are shared amongst like centralities; the scattering parameters ($\mathbb{R}f_0$, $\mathbb{I}f_0$, d_0) are shared amongst all. The black solid line represents the "raw" fit, i.e. not corrected for momentum resolution effects nor non-flat background. The green line shows the fit to the non-flat background. The purple points show the fit after momentum resolution and non-flat background corrections have been applied. The initial values of the parameters is listed, as well as the final fit values with uncertainties.

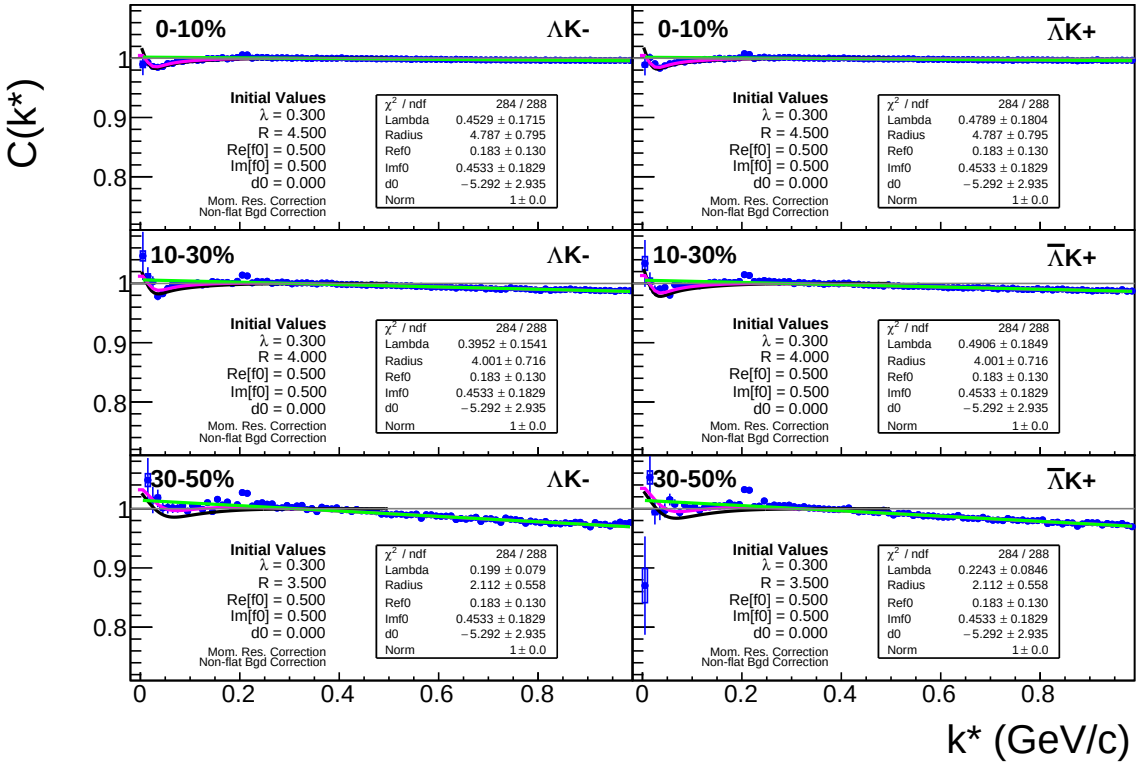

Fig. 3: Fits to the ΛK^-(left) with $\bar{\Lambda}K^+$ (right) data for the centralities 0-10% (top), 10-30% (middle), and 30-50% (bottom). Each has unique λ and normalization parameters. The radii are shared amongst like centralities; the scattering parameters ($\mathbb{R}f_0$, $\mathbb{I}f_0$, d_0) are shared amongst all. The black solid line represents the "raw" fit, i.e. not corrected for momentum resolution effects nor non-flat background. The green line shows the fit to the non-flat background. The purple points show the fit after momentum resolution and non-flat background corrections have been applied. The initial values of the parameters is listed, as well as the final fit values with uncertainties.

Fit Results $\Lambda(\bar{\Lambda})K^0_S$

Pair Type	Centrality	Fit Parameters				
		λ	R	$\mathbb{R}f_0$	$\mathbb{I}f_0$	d_0
ΛK^0_S	0-10%	0.654 ± 0.539 (stat.) ± 0.074 (sys.)	3.863 ± 0.875 (stat.) ± 0.324 (sys.)	-0.116 ± 0.053 (stat.) ± 0.094 (sys.)	0.194 ± 0.109 (stat.) ± 0.056 (sys.)	3.627 ± 1.568 (stat.) ± 0.890 (sys.)
	10-30%	0.312 ± 0.143 (stat.) ± 0.020 (sys.)	2.000 ± 0.500 (stat.) ± 0.000 (sys.)			
	30-50%	0.800 ± 0.400 (stat.) ± 0.124 (sys.)	2.349 ± 0.561 (stat.) ± 0.230 (sys.)			
$\bar{\Lambda}K^0_S$	0-10%	0.623 ± 0.526 (stat.) ± 0.058 (sys.)	3.863 ± 0.875 (stat.) ± 0.324 (sys.)			
	10-30%	0.326 ± 0.148 (stat.) ± 0.021 (sys.)	2.000 ± 0.500 (stat.) ± 0.000 (sys.)			
	30-50%	0.757 ± 0.140 (stat.) ± 0.093 (sys.)	2.349 ± 0.561 (stat.) ± 0.230 (sys.)			

Table 1: Fit Results $\Lambda(\bar{\Lambda})K^0_S$. Each pair is fit simultaneously with its conjugate (ie. ΛK^0_S with $\bar{\Lambda}K^0_S$) across all centralities (0-10%, 10-30%, 30-50%), for a total of 6 simultaneous analyses in the fit. Each analysis has a unique λ and normalization parameter. The radii are shared between analyses of like centrality, as these should have similar source sizes. The scattering parameters ($\mathbb{R}f_0$, $\mathbb{I}f_0$, d_0) are shared amongst all. The fit is done on the data with only statistical error bars. The errors marked as "stat." are those returned by MINUIT. The errors marked as "sys." are those which result from my systematic analysis (as outlined in Section **??**).

Fit Results $\Lambda(\bar{\Lambda})K^{\pm}$

Pair Type	Centrality	Fit Parameters				
		λ	R	$\mathbb{R}f_0$	$\mathbb{I}f_0$	d_0
ΛK^+	0-10%	0.379 ± 0.088 (stat.) ± 0.205 (sys.)	4.045 ± 0.202 (stat.) ± 1.076 (sys.)	-0.687 ± 0.151 (stat.) ± 0.107 (sys.)	0.391 ± 0.107 (stat.) ± 0.212 (sys.)	0.639 ± 0.507 (stat.) ± 2.378 (sys.)
	10-30%	0.485 ± 0.098 (stat.) ± 0.157 (sys.)	3.923 ± 0.318 (stat.) ± 0.926 (sys.)			
	30-50%	0.639 ± 0.157 (stat.) ± 0.092 (sys.)	3.716 ± 0.411 (stat.) ± 0.460 (sys.)			
$\bar{\Lambda}K^-$	0-10%	0.371 ± 0.086 (stat.) ± 0.193 (sys.)	4.045 ± 0.202 (stat.) ± 1.076 (sys.)			
	10-30%	0.411 ± 0.085 (stat.) ± 0.116 (sys.)	3.923 ± 0.318 (stat.) ± 0.926 (sys.)			
	30-50%	0.616 ± 0.154 (stat.) ± 0.071 (sys.)	3.716 ± 0.411 (stat.) ± 0.460 (sys.)			
ΛK^-	0-10%	0.453 ± 0.172 (stat.) ± 0.080 (sys.)	4.787 ± 0.795 (stat.) ± 0.270 (sys.)	0.183 ± 0.130 (stat.) ± 0.074 (sys.)	0.453 ± 0.183 (stat.) ± 0.162 (sys.)	-5.292 ± 2.935 (stat.) ± 3.748 (sys.)
	10-30%	0.395 ± 0.154 (stat.) ± 0.052 (sys.)	4.001 ± 0.716 (stat.) ± 0.215 (sys.)			
	30-50%	0.199 ± 0.079 (stat.) ± 0.031 (sys.)	2.112 ± 0.558 (stat.) ± 0.176 (sys.)			
$\bar{\Lambda}K^+$	0-10%	0.479 ± 0.180 (stat.) ± 0.082 (sys.)	4.787 ± 0.180 (stat.) ± 0.270 (sys.)			
	10-30%	0.491 ± 0.185 (stat.) ± 0.061 (sys.)	4.001 ± 0.716 (stat.) ± 0.215 (sys.)			
	30-50%	0.224 ± 0.085 (stat.) ± 0.029 (sys.)	2.112 ± 0.558 (stat.) ± 0.176 (sys.)			

Table 2: Fit Results $\Lambda(\bar{\Lambda})K^{\pm}$ Each pair is fit simultaneously with its conjugate (ie. ΛK^+ with $\bar{\Lambda}K^-$ and ΛK^- with $\bar{\Lambda}K^+$) across all centralities (0-10%, 10-30%, 30-50%), for a total of 6 simultaneous analyses in the fit. Each analysis has a unique λ and normalization parameter. The radii are shared between analyses of like centrality, as these should have similar source sizes. The scattering parameters ($\mathbb{R}f_0$, $\mathbb{I}f_0$, d_0) are shared amongst all. The fit is done on the data with only statistical error bars. The errors marked as "stat." are those returned by MINUIT. The errors marked as "sys." are those which result from my systematic analysis (as outlined in Section **??**).

1.2 Results: $\Xi K^{\pm}$