

Fit Results $\Lambda(\bar{\Lambda})K_S^0$						
System	Centrality	Fit Parameters				
		$\lambda$	$R$	$\Re f_0$	$\Im f_0$	$d_0$
$\Lambda K_S^0$ & $\bar{\Lambda} K_S^0$	0-10%		$2.63 \pm 0.55$ (stat.) $\pm 0.33$ (sys.)			
	10-30%	$1.50 \pm 0.89$ (stat.) $\pm 0.16$ (sys.)	$2.44 \pm 0.53$ (stat.) $\pm 0.23$ (sys.)	$-0.15 \pm 0.04$ (stat.) $\pm 0.16$ (sys.)	$0.05 \pm 0.05$ (stat.) $\pm 0.13$ (sys.)	$-0.65 \pm 7.43$ (stat.) $\pm 0.62$ (sys.)
	30-50%		$1.81 \pm 0.36$ (stat.) $\pm 0.11$ (sys.)			

**Table 1:** Fit Results  $\Lambda(\bar{\Lambda})K_S^0$ , with 3 residual correlations included. Each pair is fit simultaneously with its conjugate (ie.  $\Lambda K_S^0$  with  $\bar{\Lambda} K_S^0$ ) across all centralities (0-10%, 10-30%, 30-50%), for a total of 6 simultaneous analyses in the fit. Each analysis has a unique  $\lambda$  and normalization parameter. The radii are shared between analyses of like centrality, as these should have similar source sizes. The scattering parameters ( $\Re f_0$ ,  $\Im f_0$ ,  $d_0$ ) 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 $\Lambda(\bar{\Lambda})K^\pm$							
System	Centrality	Pair Type	Fit Parameters				
			$\lambda$	$R$	$\mathbb{R}f_0$	$\mathbb{I}f_0$	$d_0$
$\Lambda K^+ \text{ \& } \bar{\Lambda} K^-$	0-10%	$\Lambda K^+$	$1.37 \pm 0.40 \text{ (stat.)} \pm 0.28 \text{ (sys.)}$	$4.90 \pm 0.81 \text{ (stat.)} \pm 0.54 \text{ (sys.)}$	$-1.13 \pm 0.25 \text{ (stat.)} \pm 0.36 \text{ (sys.)}$	$0.36 \pm 0.22 \text{ (stat.)} \pm 0.23 \text{ (sys.)}$	$1.09 \pm 0.33 \text{ (stat.)} \pm 0.53 \text{ (sys.)}$
		$\bar{\Lambda} K^-$	$1.39 \pm 0.41 \text{ (stat.)} \pm 0.33 \text{ (sys.)}$				
	10-30%	$\Lambda K^+$	$1.70 \pm 0.58 \text{ (stat.)} \pm 0.36 \text{ (sys.)}$	$4.78 \pm 0.75 \text{ (stat.)} \pm 0.42 \text{ (sys.)}$			
		$\bar{\Lambda} K^-$	$1.51 \pm 0.50 \text{ (stat.)} \pm 0.29 \text{ (sys.)}$				
	30-50%	$\Lambda K^+$	$1.30 \pm 0.34 \text{ (stat.)} \pm 0.31 \text{ (sys.)}$	$3.24 \pm 0.40 \text{ (stat.)} \pm 0.32 \text{ (sys.)}$			
		$\bar{\Lambda} K^-$	$1.18 \pm 0.31 \text{ (stat.)} \pm 0.19 \text{ (sys.)}$				
$\Lambda K^- \text{ \& } \bar{\Lambda} K^+$	0-10%	$\Lambda K^-$	$1.58 \pm 0.60 \text{ (stat.)} \pm 0.24 \text{ (sys.)}$	$4.11 \pm 0.58 \text{ (stat.)} \pm 0.81 \text{ (sys.)}$	$0.15 \pm 0.11 \text{ (stat.)} \pm 0.14 \text{ (sys.)}$	$0.30 \pm 0.16 \text{ (stat.)} \pm 0.11 \text{ (sys.)}$	$2.07 \pm 3.17 \text{ (stat.)} \pm 1.33 \text{ (sys.)}$
		$\bar{\Lambda} K^+$	$1.60 \pm 0.58 \text{ (stat.)} \pm 0.27 \text{ (sys.)}$				
	10-30%	$\Lambda K^-$	$1.08 \pm 0.46 \text{ (stat.)} \pm 0.27 \text{ (sys.)}$	$3.05 \pm 0.55 \text{ (stat.)} \pm 0.60 \text{ (sys.)}$			
		$\bar{\Lambda} K^+$	$1.10 \pm 0.46 \text{ (stat.)} \pm 0.26 \text{ (sys.)}$				
	30-50%	$\Lambda K^-$	$1.27 \pm 0.97 \text{ (stat.)} \pm 0.57 \text{ (sys.)}$	$1.98 \pm 0.46 \text{ (stat.)} \pm 0.38 \text{ (sys.)}$			
		$\bar{\Lambda} K^+$	$0.83 \pm 0.39 \text{ (stat.)} \pm 0.37 \text{ (sys.)}$				

**Table 2:** Fit Results  $\Lambda(\bar{\Lambda})K^\pm$ , with 3 residual correlations included. Each pair is fit simultaneously with its conjugate (ie.  $\Lambda K^+$  with  $\bar{\Lambda} K^-$  and  $\Lambda K^-$  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  $\lambda$  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 ??).

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System	Centrality	Fit Parameters				
		$\lambda$	$R$	$\Re f_0$	$\Im f_0$	$d_0$
$\Lambda K^+ \text{ \& } \bar{\Lambda} K^-$	0-10%	$1.83 \pm 0.30 \text{ (stat.)} \pm 0.28 \text{ (sys.)}$	$5.81 \pm 0.55 \text{ (stat.)} \pm 0.54 \text{ (sys.)}$	$-1.12 \pm 0.14 \text{ (stat.)} \pm 0.36 \text{ (sys.)}$	$0.48 \pm 0.13 \text{ (stat.)} \pm 0.23 \text{ (sys.)}$	$1.01 \pm 0.30 \text{ (stat.)} \pm 0.53 \text{ (sys.)}$
	10-30%	$1.31 \pm 0.23 \text{ (stat.)} \pm 0.36 \text{ (sys.)}$	$4.50 \pm 0.42 \text{ (stat.)} \pm 0.42 \text{ (sys.)}$			
$\Lambda K^+ \text{ \& } \bar{\Lambda} K^-$	30-50%	$1.07 \pm 0.19 \text{ (stat.)} \pm 0.31 \text{ (sys.)}$	$3.09 \pm 0.27 \text{ (stat.)} \pm 0.32 \text{ (sys.)}$	$0.39 \pm 0.12 \text{ (stat.)} \pm 0.14 \text{ (sys.)}$	$0.45 \pm 0.09 \text{ (stat.)} \pm 0.11 \text{ (sys.)}$	$-4.35 \pm 1.38 \text{ (stat.)} \pm 1.33 \text{ (sys.)}$

**Table 3:** Fit Results  $\Lambda(\bar{\Lambda})K^\pm$ , with 3 residual correlations included. Each pair is fit simultaneously with its conjugate (ie.  $\Lambda K^+$  with  $\bar{\Lambda} K^-$  and  $\Lambda K^-$  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  $\lambda$  and normalization parameter. The radii are shared between analyses of like centrality, as these should have similar source sizes. The scattering parameters ( $\Re f_0$ ,  $\Im f_0$ ,  $d_0$ ) 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 $\Lambda(\bar{\Lambda})K^\pm$						
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		$\lambda$	$R$	$\Re f_0$	$\Im f_0$	$d_0$
$\Lambda K^+ \text{ \& } \bar{\Lambda} K^-$	0-10%	$1.91 \pm 0.46 \text{ (stat.)} \pm 0.28 \text{ (sys.)}$	$5.83 \pm 0.64 \text{ (stat.)} \pm 0.54 \text{ (sys.)}$	$-1.09 \pm 0.22 \text{ (stat.)} \pm 0.36 \text{ (sys.)}$	$0.44 \pm 0.20 \text{ (stat.)} \pm 0.23 \text{ (sys.)}$	$0.99 \pm 0.35 \text{ (stat.)} \pm 0.53 \text{ (sys.)}$
	10-30%	$1.39 \pm 0.36 \text{ (stat.)} \pm 0.36 \text{ (sys.)}$	$4.53 \pm 0.48 \text{ (stat.)} \pm 0.42 \text{ (sys.)}$			
	30-50%	$1.02 \pm 0.24 \text{ (stat.)} \pm 0.31 \text{ (sys.)}$	$2.99 \pm 0.30 \text{ (stat.)} \pm 0.32 \text{ (sys.)}$			
$\Lambda K^- \text{ \& } \bar{\Lambda} K^+$	0-10%	$1.83 \pm 0.37 \text{ (stat.)} \pm 0.24 \text{ (sys.)}$	$5.83 \pm 0.64 \text{ (stat.)} \pm 0.81 \text{ (sys.)}$	$0.40 \pm 0.12 \text{ (stat.)} \pm 0.14 \text{ (sys.)}$	$0.45 \pm 0.11 \text{ (stat.)} \pm 0.11 \text{ (sys.)}$	$-4.37 \pm 1.47 \text{ (stat.)} \pm 1.33 \text{ (sys.)}$
	10-30%	$1.31 \pm 0.26 \text{ (stat.)} \pm 0.27 \text{ (sys.)}$	$4.53 \pm 0.48 \text{ (stat.)} \pm 0.60 \text{ (sys.)}$			
	30-50%	$1.11 \pm 0.24 \text{ (stat.)} \pm 0.57 \text{ (sys.)}$	$2.99 \pm 0.30 \text{ (stat.)} \pm 0.38 \text{ (sys.)}$			

**Table 4:** Fit Results  $\Lambda(\bar{\Lambda})K^\pm$ , with 3 residual correlations included. Each pair is fit simultaneously with its conjugate (ie.  $\Lambda K^+$  with  $\bar{\Lambda} K^-$  and  $\Lambda K^-$  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  $\lambda$  and normalization parameter. The radii are shared between analyses of like centrality, as these should have similar source sizes. The scattering parameters ( $\Re f_0$ ,  $\Im f_0$ ,  $d_0$ ) 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 ??).