

## 1 Systematic Errors

This study is currently ongoing, and an estimate of my systematic uncertainties should be complete before 9 December 2016.

In order to understand my systematic uncertainties, the analysis code was run many times using slightly different values for a number of important cuts, and the results were compared. To quantify the effect, the difference in two correlation functions obtained using different values for a given cut was fit with a simple exponential decay function:

$$\Delta C(k^*) = Ae^{-Bk^*} \quad (1)$$

The amplitude,  $A$ , and its associated uncertainty for the various cuts can be found in Tables 1 through 17. The systematic effect of the variation is marked as significant (“Sig” column) if the amplitude is not within  $2\sigma$  of 0. Although this proves qualitatively useful, these fits will likely not be used to quantify the systematic effects.

In order to quantify the systematic errors on the correlation functions, all correlations will be averaged, and the resulting variance will be taken as the systematic error. Similarly, the fit parameters extracted from all of these correlation functions will be averaged, and their resulting variances will be taken as the systematic errors for the fit parameters.

### 1.1 Systematic Errors: $\Lambda K_S^0$

#### 1.1.1 Particle and Pair Cuts

The cuts included in the systematic study, as well as the values used in the variations, are listed below. Note, the central value corresponds to that used in the analysis.

1. DCA  $\Lambda(\bar{\Lambda})$ : {4, 5, 6 mm}
2. DCA  $K_S^0$ : {2, 3, 4 mm}
3. DCA  $\Lambda(\bar{\Lambda})$  Daughters: {3, 4, 5 mm}
4. DCA  $K_S^0$  Daughters: {2, 3, 4 mm}
5.  $\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle: {0.9992, 0.9993, 0.9994}
6.  $K_S^0$  Cosine of Pointing Angle: {0.9992, 0.9993, 0.9994}
7. DCA to Primary Vertex of  $p(\bar{p})$  Daughter of  $\Lambda(\bar{\Lambda})$ : {0.5, 1, 2 mm}
8. DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$ : {0.5, 1, 2 mm}
9. DCA to Primary Vertex of  $\pi^+$  Daughter of  $K_S^0$ : {2, 3, 4 mm}
10. DCA to Primary Vertex of  $\pi^-$  Daughter of  $K_S^0$ : {2, 3, 4 mm}
11. Average Separation of Like-Charge Daughters: {5, 6, 7 cm}

DCA  $\Lambda(\bar{\Lambda})$ 

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		4 vs 5 mm			5 vs 6 mm		
$\Lambda K_S^0$	0-10%	2.616e-04	2.840e-04	No	-5.282e-03	4.887e-03	No
	10-30%	-1.236e-03	1.568e-03	No	6.110e-05	1.457e-04	No
	30-50%	-4.664e-02	3.295e-02	No	-1.877e-01	7.037e-02	Yes
$\bar{\Lambda} K_S^0$	0-10%	-6.093e-05	3.827e-05	No	-9.599e-02	1.133e-01	No
	10-30%	-3.478e-05	1.983e-04	No	-2.846e-04	6.743e-04	No
	30-50%	-2.054e-02	2.609e-02	No	-3.701e-03	3.136e-03	No

**Table 1:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $\Lambda(\bar{\Lambda})$  captionDCA  $K_S^0$ 

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		2 vs 3 mm			3 vs 4 mm		
$\Lambda K_S^0$	0-10%	-1.149e-04	1.616e-04	No	1.495e-04	3.020e-04	No
	10-30%	2.336e-04	7.234e-05	Yes	-2.560e-03	2.270e-03	No
	30-50%	-7.966e-03	4.151e-03	No	-1.721e-02	6.245e-03	Yes
$\bar{\Lambda} K_S^0$	0-10%	6.657e-05	5.808e-04	No	7.037e-05	2.753e-05	Yes
	10-30%	-4.373e-04	3.529e-04	No	-4.653e-04	3.627e-04	No
	30-50%	-2.048e-03	1.296e-03	No	-2.871e-04	8.150e-04	No

**Table 2:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $K_S^0$  captionDCA  $\Lambda(\bar{\Lambda})$  Daughters

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		3 vs 4 mm			4 vs 5 mm		
$\Lambda K_S^0$	0-10%	1.743e-05	3.776e-05	No	1.972e-04	2.813e-04	No
	10-30%	1.293e-04	7.761e-05	No	-8.925e-05	6.165e-05	No
	30-50%	-8.647e-02	9.120e-02	No	-5.097e-02	5.611e-02	No
$\bar{\Lambda} K_S^0$	0-10%	-8.539e-06	3.914e-05	No	5.936e-05	3.128e-05	No
	10-30%	1.001e-04	7.999e-05	No	-2.452e-04	2.952e-04	No
	30-50%	4.672e-05	1.859e-04	No	-1.423e-01	1.753e-01	No

**Table 3:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $\Lambda(\bar{\Lambda})$  DaughtersDCA  $K_S^0$  Daughters

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		2 vs 3 mm			3 vs 4 mm		
$\Lambda K_S^0$	0-10%	-1.383e-03	1.201e-03	No	-2.394e-03	2.528e-03	No
	10-30%	-1.199e-01	6.112e-02	No	-1.673e-03	1.620e-03	No
	30-50%	-1.397e-01	5.508e-02	Yes	-2.249e-03	3.303e-03	No
$\bar{\Lambda} K_S^0$	0-10%	-3.646e-03	2.561e-03	No	-4.246e-04	5.171e-04	No
	10-30%	1.800e-04	8.734e-05	Yes	-7.128e-04	9.398e-04	No
	30-50%	-2.813e-02	1.883e-02	No	-1.285e-02	9.463e-03	No

**Table 4:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $K_S^0$  Daughters

$\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		0.9992 vs 0.9993			0.9993 vs 0.9994		
$\Lambda K_S^0$	0-10%	4.733e-03	2.311e-03	Yes	-7.459e-05	1.768e-04	No
	10-30%	5.201e-03	2.270e-03	Yes	-2.253e-05	7.593e-05	No
	30-50%	-6.078e-05	6.309e-05	No	5.494e-03	1.496e-03	Yes
$\bar{\Lambda} K_S^0$	0-10%	-2.031e-05	8.438e-07	Yes	-4.978e-05	6.433e-05	No
	10-30%	3.929e-04	2.778e-04	No	1.333e-04	2.362e-04	No
	30-50%	1.770e-03	6.120e-04	Yes	1.169e-04	7.436e-05	No

**Table 5:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses:  $\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle $K_S^0$  Cosine of Pointing Angle

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		0.9992 vs 0.9993			0.9993 vs 0.9994		
$\Lambda K_S^0$	0-10%	-3.282e-04	4.102e-04	No	7.088e-04	3.667e-04	No
	10-30%	1.476e-03	2.082e-03	No	8.069e-03	3.961e-03	Yes
	30-50%	-3.150e-04	6.895e-04	No	5.057e-03	2.639e-03	No
$\bar{\Lambda} K_S^0$	0-10%	5.986e-04	4.487e-04	No	7.197e-04	7.865e-04	No
	10-30%	3.562e-03	1.378e-03	Yes	1.303e-03	1.067e-03	No
	30-50%	5.878e-02	8.703e-02	No	1.493e-04	1.017e-04	No

**Table 6:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses:  $K_S^0$  Cosine of Pointing AngleDCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$ 

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		0.5 vs 1 mm			1 vs 2 mm		
$\Lambda K_S^0$	0-10%	0.000e+00	0.000e+00	No	-2.602e-03	2.525e-03	No
	10-30%	2.964e-07	1.165e-06	No	1.702e-04	9.110e-05	No
	30-50%	0.000e+00	0.000e+00	No	5.775e-03	7.524e-03	No
$\bar{\Lambda} K_S^0$	0-10%	0.000e+00	0.000e+00	No	-2.584e-04	4.464e-04	No
	10-30%	0.000e+00	0.000e+00	No	-3.469e-04	1.403e-04	Yes
	30-50%	0.000e+00	0.000e+00	No	-6.689e-04	1.232e-03	No

**Table 7:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$ DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$ 

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		2 vs 3 mm			3 vs 4 mm		
$\Lambda K_S^0$	0-10%	3.829e-05	1.846e-05	Yes	-4.781e-05	8.826e-05	No
	10-30%	1.498e-03	2.398e-03	No	4.245e+00	4.457e+01	No
	30-50%	3.751e-03	2.567e-03	No	6.001e-03	4.805e-03	No
$\bar{\Lambda} K_S^0$	0-10%	5.680e-05	1.816e-05	Yes	-3.516e-05	2.272e-05	No
	10-30%	1.539e-04	2.857e-04	No	-1.311e-04	4.871e-05	Yes
	30-50%	1.410e-03	1.734e-03	No	4.401e-02	1.349e-02	Yes

**Table 8:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$

DCA to Primary Vertex of  $\pi^+$  Daughter of  $K_S^0$ 

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		2 vs 3 mm			3 vs 4 mm		
$\Lambda K_S^0$	0-10%	-4.519e-05	2.636e-05	No	-8.563e-05	3.040e-05	Yes
	10-30%	-8.408e-03	7.107e-03	No	-4.274e-04	9.735e-04	No
	30-50%	2.064e-03	1.619e-03	No	1.274e-03	1.270e-03	No
$\bar{\Lambda} K_S^0$	0-10%	8.474e-04	1.271e-03	No	3.787e-04	3.383e-04	No
	10-30%	-7.583e-05	5.660e-05	No	-7.112e-03	1.605e-02	No
	30-50%	-6.532e-04	1.388e-04	Yes	3.770e-02	1.629e-02	Yes

**Table 9:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $\pi^+$  Daughter of  $K_S^0$ DCA to Primary Vertex of  $\pi^-$  Daughter of  $K_S^0$ 

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		2 vs 3 mm			3 vs 4 mm		
$\Lambda K_S^0$	0-10%	-3.283e-04	4.184e-04	No	3.117e-04	2.151e-04	No
	10-30%	-7.208e-07	3.153e-04	No	2.858e-04	6.697e-04	No
	30-50%	4.434e-02	2.574e-02	No	2.761e-04	1.565e-04	No
$\bar{\Lambda} K_S^0$	0-10%	8.823e-05	2.701e-05	Yes	9.286e-02	1.113e-01	No
	10-30%	1.778e-04	5.686e-05	Yes	1.343e-03	1.986e-03	No
	30-50%	1.449e-04	1.368e-04	No	-1.887e-04	1.605e-04	No

**Table 10:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $\pi^-$  Daughter of  $K_S^0$ 

Average Separation of Like-Charge Daughters

Pair Type	Daughters		Centrality	Fit Amplitude					
				Amplitude	Error	Sig	Amplitude	Error	Sig
				5.0 vs 6.0 cm			6.0 vs 7.0 cm		
$\Lambda K_S^0$	$p(\Lambda)$	$\pi^+(K_S^0)$	0-10%	1.665e-05	2.087e-06	Yes	2.653e-04	1.739e-04	No
			10-30%	2.331e-05	4.563e-05	No	-1.713e-05	6.046e-06	Yes
			30-50%	4.333e-04	1.155e-04	Yes	7.198e-04	1.244e-04	Yes
$\Lambda K_S^0$	$\pi^-(\Lambda)$	$\pi^-(K_S^0)$	0-10%	7.361e-06	2.047e-06	Yes	-2.548e-05	2.467e-05	No
			10-30%	4.421e-05	3.105e-05	No	7.315e-04	1.322e-04	Yes
			30-50%	6.366e-05	5.813e-05	No	1.154e-04	8.695e-06	Yes
$\bar{\Lambda} K_S^0$	$\pi^+(\bar{\Lambda})$	$\pi^+(K_S^0)$	0-10%	8.888e-04	2.082e-04	Yes	-5.316e-06	3.826e-05	No
			10-30%	9.162e-04	2.614e-04	Yes	1.925e-05	6.041e-05	No
			30-50%	1.478e-04	4.676e-05	Yes	9.973e-05	6.549e-05	No
$\bar{\Lambda} K_S^0$	$\bar{p}(\bar{\Lambda})$	$\pi^-(K_S^0)$	0-10%	1.730e-04	1.161e-04	No	-2.798e-05	4.725e-05	No
			10-30%	1.579e-05	5.734e-05	No	-3.884e-07	6.028e-06	No
			30-50%	1.074e-04	3.781e-05	Yes	4.932e-04	2.440e-04	Yes

**Table 11:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: Average Separation of Positive Daughters

DCA $\Lambda(\bar{\Lambda})$							
Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		4 vs 5 mm			5 vs 6 mm		
$\Lambda K^+$	0-10%	-1.200e-04	8.688e-05	No	2.534e-04	1.983e-04	No
	10-30%	-3.714e-05	1.986e-04	No	6.806e-02	7.932e-02	No
	30-50%	-5.383e-02	6.237e-02	No	-3.545e-04	4.265e-04	No
$\bar{\Lambda} K^-$	0-10%	-1.388e-04	1.057e-04	No	4.615e-05	1.693e-05	Yes
	10-30%	-7.745e-04	4.039e-04	No	-3.957e-05	5.462e-04	No
	30-50%	1.601e-03	1.398e-03	No	2.435e-04	1.118e-03	No
$\Lambda K^-$	0-10%	-6.034e-05	1.158e-04	No	1.924e-03	1.398e-03	No
	10-30%	4.468e-05	4.450e-05	No	-4.520e-04	3.092e-04	No
	30-50%	-1.496e-03	9.168e-04	No	-7.476e-04	1.012e-03	No
$\bar{\Lambda} K^+$	0-10%	-1.777e-04	2.999e-04	No	-2.152e-05	1.639e-05	No
	10-30%	-3.655e-04	3.734e-04	No	-8.857e-04	7.247e-04	No
	30-50%	-1.650e-03	1.124e-03	No	-3.706e-04	3.366e-04	No

**Table 12:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA  $\Lambda(\bar{\Lambda})$

### 1.1.2 Non-Flat Background

### 1.1.3 Fit Range

### 1.1.4 Normalization Range

### 1.1.5 Momentum Resolution Correction

## 1.2 Systematic Errors: $\Lambda K^\pm$

### 1.2.1 Particle and Pair Cuts

The cuts included in the systematic study, as well as the values used in the variations, are listed below. Note, the central value corresponds to that used in the analysis.

1. DCA  $\Lambda(\bar{\Lambda})$ : {4, 5, 6 mm}
2. DCA  $\Lambda(\bar{\Lambda})$  Daughters: {3, 4, 5 mm}
3.  $\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle: {0.9992, 0.9993, 0.9994}
4. DCA to Primary Vertex of  $p(\bar{p})$  Daughter of  $\Lambda(\bar{\Lambda})$ : {0.5, 1, 2 mm}
5. DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$ : {0.5, 1, 2 mm}
6. Average Separation of  $\Lambda(\bar{\Lambda})$  Daughter with Same Charge as  $K^\pm$ : {7, 8, 9 cm}

### 1.2.2 Non-Flat Background

### 1.2.3 Fit Range

### 1.2.4 Normalization Range

### 1.2.5 Momentum Resolution Correction

DCA $\Lambda(\bar{\Lambda})$ Daughters							
Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		3 vs 4 mm			4 vs 5 mm		
$\Lambda K^+$	0-10%	-1.170e-02	9.437e-03	No	-2.349e-03	1.142e-03	Yes
	10-30%	-3.522e-04	3.863e-04	No	1.359e-05	3.543e-05	No
	30-50%	1.090e-03	1.354e-03	No	-7.623e-02	3.708e-02	Yes
$\bar{\Lambda} K^-$	0-10%	-1.306e-04	1.486e-04	No	-4.771e-04	5.081e-04	No
	10-30%	7.482e-04	8.811e-04	No	8.166e-05	3.779e-05	Yes
	30-50%	-7.928e-04	1.146e-03	No	-2.568e-04	8.664e-05	Yes
$\Lambda K^-$	0-10%	-1.498e-04	1.562e-04	No	-5.849e-04	6.665e-04	No
	10-30%	1.204e-05	2.583e-04	No	-9.794e-05	1.314e-04	No
	30-50%	-9.314e-03	6.614e-03	No	-1.264e-04	8.487e-05	No
$\bar{\Lambda} K^+$	0-10%	-4.149e-04	3.296e-04	No	5.288e-05	7.505e-05	No
	10-30%	2.293e-04	3.396e-04	No	-8.853e-04	1.196e-03	No
	30-50%	-6.129e-05	7.969e-04	No	1.735e-04	8.784e-05	No

**Table 13:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA  $\Lambda(\bar{\Lambda})$  Daughters

$\Lambda(\bar{\Lambda})$ Cosine of Pointing Angle							
Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		0.9992 vs 0.9993			0.9993 vs 0.9994		
$\Lambda K^+$	0-10%	-1.448e-05	9.361e-06	No	6.215e-04	4.967e-04	No
	10-30%	3.355e-02	2.063e-02	No	5.291e-04	7.270e-04	No
	30-50%	4.609e-03	5.410e-03	No	1.360e-04	4.949e-05	Yes
$\bar{\Lambda} K^-$	0-10%	-4.085e-06	1.016e-05	No	1.211e-05	1.145e-05	No
	10-30%	1.249e-04	1.660e-04	No	-2.328e-05	2.350e-05	No
	30-50%	2.214e-03	1.301e-03	No	-3.532e-03	4.294e-03	No
$\Lambda K^-$	0-10%	3.409e-05	9.589e-06	Yes	1.170e-04	1.430e-04	No
	10-30%	6.537e-05	1.967e-05	Yes	2.119e-04	2.609e-04	No
	30-50%	-4.434e-05	4.608e-05	No	9.610e-05	5.145e-05	No
$\bar{\Lambda} K^+$	0-10%	-3.270e-05	5.714e-05	No	-1.744e-05	1.103e-05	No
	10-30%	-7.203e-05	2.042e-05	Yes	1.023e-04	1.924e-04	No
	30-50%	2.030e-03	1.831e-03	No	7.645e-05	5.303e-05	No

**Table 14:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses:  $\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle

DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$ 

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		0.5 vs 1 mm			1 vs 2 mm		
$\Lambda K^+$	0-10%	0.000e+00	0.000e+00	No	-2.429e-04	2.561e-04	No
	10-30%	-3.554e-08	6.097e-08	No	1.598e-04	7.738e-05	Yes
	30-50%	0.000e+00	0.000e+00	No	-2.317e-03	1.992e-03	No
$\bar{\Lambda} K^-$	0-10%	0.000e+00	0.000e+00	No	-9.883e-04	9.265e-04	No
	10-30%	0.000e+00	0.000e+00	No	-2.472e-04	5.419e-04	No
	30-50%	0.000e+00	0.000e+00	No	1.227e-03	1.328e-03	No
$\Lambda K^-$	0-10%	0.000e+00	0.000e+00	No	3.677e-03	4.028e-03	No
	10-30%	1.875e-07	1.095e-06	No	6.518e-03	5.373e-03	No
	30-50%	0.000e+00	0.000e+00	No	-2.985e-04	5.747e-04	No
$\bar{\Lambda} K^+$	0-10%	0.000e+00	0.000e+00	No	-4.252e-04	3.414e-04	No
	10-30%	0.000e+00	0.000e+00	No	1.033e-03	8.146e-04	No
	30-50%	0.000e+00	0.000e+00	No	-7.193e-04	7.376e-04	No

**Table 15:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$ DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$ 

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		2 vs 3 mm			3 vs 4 mm		
$\Lambda K^+$	0-10%	7.991e-02	3.641e-01	No	-2.774e-03	3.759e-03	No
	10-30%	-2.559e-05	5.097e-05	No	-4.152e-03	3.267e-03	No
	30-50%	1.461e-02	5.067e-03	Yes	-8.144e-05	3.055e-04	No
$\bar{\Lambda} K^-$	0-10%	-9.069e-06	1.070e-05	No	-1.506e-04	2.900e-04	No
	10-30%	1.485e-05	2.273e-05	No	-2.281e-04	2.219e-04	No
	30-50%	3.830e-03	2.477e-03	No	-2.258e-04	8.241e-04	No
$\Lambda K^-$	0-10%	-4.017e-05	5.473e-05	No	-3.418e-05	5.661e-05	No
	10-30%	6.474e-05	7.444e-05	No	4.487e-04	6.332e-04	No
	30-50%	3.344e-03	3.224e-03	No	9.751e-05	7.055e-05	No
$\bar{\Lambda} K^+$	0-10%	2.080e-05	1.035e-05	Yes	-1.947e-05	9.814e-05	No
	10-30%	-4.528e-04	3.642e-04	No	6.138e-05	2.809e-05	Yes
	30-50%	2.643e-04	5.272e-05	Yes	-2.107e-03	1.815e-03	No

**Table 16:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$

Average Separation of  $\Lambda(\bar{\Lambda})$  Daughter With Same Charge as  $K^\pm$ 

Pair Type	Daughter	Track	Centrality	Fit Amplitudes					
				Amplitude	Error	Sig	Amplitude	Error	Sig
				7 vs 8 mm			8 vs 9 mm		
$\Lambda K^+$	$p(\Lambda)$	$K^+$	0-10%	1.310e-06	1.696e-07	Yes	4.374e-06	2.246e-07	Yes
			10-30%	2.084e-06	4.698e-07	Yes	4.124e-06	4.593e-06	No
			30-50%	-1.186e-03	9.739e-04	No	3.110e-05	3.395e-05	No
$\bar{\Lambda} K^-$	$\bar{p}(\bar{\Lambda})$	$K^-$	0-10%	2.057e-06	1.499e-07	Yes	3.829e-06	1.327e-07	Yes
			10-30%	7.002e-06	6.292e-06	No	4.608e-06	4.256e-06	No
			30-50%	4.608e-06	4.256e-06	No	9.199e-05	7.119e-05	No
$\Lambda K^-$	$\pi^-(\Lambda)$	$K^-$	0-10%	4.686e-06	3.491e-07	Yes	2.311e-06	5.498e-07	Yes
			10-30%	5.411e-06	7.471e-07	Yes	7.344e-06	5.583e-07	Yes
			30-50%	2.045e-04	1.593e-04	No	1.570e-04	3.330e-04	No
$\bar{\Lambda} K^+$	$\pi^+(\bar{\Lambda})$	$K^+$	0-10%	-3.063e-04	1.137e-04	Yes	-6.134e-05	6.307e-05	No
			10-30%	6.019e-06	6.879e-07	Yes	1.473e-06	1.292e-06	No
			30-50%	1.773e-04	6.857e-05	Yes	1.701e-04	1.120e-04	No

**Table 17:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: Average Separation of  $\Lambda(\bar{\Lambda})$  Daughter With Same Charge as  $K^\pm$