

DCA  $\Lambda(\bar{\Lambda})$  500MeVMaxFit

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%	8.210e-04	4.776e-03	No	-7.614e-03	5.701e-03	No
	10-30%	-8.845e-04	6.547e-04	No	-4.438e-03	4.700e-03	No
	30-50%	-5.078e-02	3.550e-02	No	-1.888e-01	7.061e-02	Yes
$\bar{\Lambda} K_S^0$	0-10%	3.951e-04	3.069e-04	No	-3.571e-02	2.149e-02	No
	10-30%	3.360e-04	1.552e-03	No	-3.442e-04	4.840e-04	No
	30-50%	-1.989e-02	2.590e-02	No	-8.031e-03	8.382e-03	No

**Table 1:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $\Lambda(\bar{\Lambda})$  captionDCA  $\Lambda(\bar{\Lambda})$  500MeVMaxFit SimpleExp

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

## 1 Systematic Errors

This study is currently ongoing. See Table ??.

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

Talk about stuff

DCA $K_S^0$ 500MeVMaxFit							
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%	-1.033e-04	5.689e-04	No	4.601e-02	1.295e-01	No
	10-30%	-3.256e-02	4.003e-01	No	-2.569e-03	2.134e-03	No
	30-50%	-9.087e-03	4.729e-03	No	-1.725e-02	6.276e-03	Yes
$\bar{\Lambda} K_S^0$	0-10%	-5.587e-02	2.478e-01	No	-3.939e-04	8.073e-04	No
	10-30%	-4.325e-04	7.423e-04	No	-2.972e-02	1.304e-01	No
	30-50%	-3.118e-01	9.701e-01	No	-4.751e-04	1.773e-03	No

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

DCA $K_S^0$ 500MeVMaxFit SimpleExp							
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 4:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $K_S^0$  caption

DCA  $\Lambda(\bar{\Lambda})$  Daughters 500MeVMaxFit

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%	-2.026e-04	6.614e-04	No	2.292e-02	8.029e-02	No
	10-30%	5.864e-05	7.232e-04	No	1.148e-03	1.704e-03	No
	30-50%	-8.853e-02	9.281e-02	No	-4.432e-02	3.643e-02	No
$\bar{\Lambda} K_S^0$	0-10%	6.097e-05	2.955e-04	No	-1.036e-02	1.335e-02	No
	10-30%	-9.871e-03	9.501e-03	No	-1.316e-03	2.197e-03	Yes
	30-50%	-2.936e-04	1.749e-03	No	-1.496e-01	1.755e-01	No

**Table 5:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $\Lambda(\bar{\Lambda})$  DaughtersDCA  $\Lambda(\bar{\Lambda})$  Daughters 500MeVMaxFit SimpleExp

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

DCA $K_S^0$ Daughters 500MeVMaxFit							
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%	-2.224e-03	1.964e-03	No	-2.608e-03	2.700e-03	No
	10-30%	-1.196e-01	6.076e-02	No	-1.712e-03	1.802e-03	No
	30-50%	-1.399e-01	5.516e-02	Yes	-2.294e-03	3.122e-03	No
$\bar{\Lambda} K_S^0$	0-10%	-3.090e-03	2.209e-03	No	-5.637e-04	1.041e-03	No
	10-30%	-1.205e-01	1.280e+00	No	-1.011e-03	3.690e-03	No
	30-50%	-2.501e-02	1.913e-02	No	-1.227e-02	9.527e-03	No

**Table 7:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $K_S^0$  Daughters

DCA $K_S^0$ Daughters 500MeVMaxFit SimpleExp							
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 8:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA  $K_S^0$  Daughters

$\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle 500MeVMaxFit

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%	4.739e-03	2.319e-03	Yes	-1.139e-02	4.924e-02	No
	10-30%	5.190e-03	2.265e-03	Yes	1.970e-02	1.534e-02	No
	30-50%	3.717e-03	1.848e-03	Yes	5.557e-03	1.618e-03	Yes
$\bar{\Lambda} K_S^0$	0-10%	1.146e-03	1.219e-03	No	-1.535e-02	9.010e-02	No
	10-30%	3.266e-02	1.168e-01	No	1.117e-02	6.354e-02	No
	30-50%	2.072e-03	1.019e-03	Yes	-9.320e-02	5.512e-01	No

**Table 9:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses:  $\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle $\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle 500MeVMaxFit SimpleExp

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

$K_S^0$ Cosine of Pointing Angle 500MeVMaxFit							
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%	-2.748e-04	2.327e-04	No	5.633e-04	1.743e-04	Yes
	10-30%	1.283e-03	1.818e-03	No	8.058e-03	3.959e-03	Yes
	30-50%	1.622e-04	1.393e-03	No	5.106e-03	2.875e-03	No
$\bar{\Lambda} K_S^0$	0-10%	4.427e-04	3.762e-04	No	6.478e-04	6.512e-04	No
	10-30%	4.230e-03	1.702e-03	Yes	1.217e-03	1.138e-03	No
	30-50%	7.326e-03	4.745e-03	Yes	5.373e-04	1.605e-03	No

**Table 11:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses:  $K_S^0$  Cosine of Pointing Angle

$K_S^0$ Cosine of Pointing Angle 500MeVMaxFit SimpleExp							
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 12:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses:  $K_S^0$  Cosine of Pointing Angle

DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$  500MeVMaxFit

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	-1.795e-03	1.945e-03	No
	10-30%	3.865e-06	2.831e-06	No	-6.617e-02	3.318e-01	No
	30-50%	0.000e+00	0.000e+00	No	5.453e-03	6.819e-03	No
$\bar{\Lambda} K_S^0$	0-10%	0.000e+00	0.000e+00	No	-8.382e-02	3.424e-01	No
	10-30%	0.000e+00	0.000e+00	No	7.522e-02	4.435e-01	No
	30-50%	0.000e+00	0.000e+00	No	9.370e-02	8.096e-02	No

**Table 13:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$ DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$  500MeVMaxFit SimpleExp

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

DCA to Primary Vertex of  $\pi^- (\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$  500MeVMaxFit

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%	-6.500e-03	9.251e-02	No	-8.742e-04	2.949e-04	Yes
	10-30%	-3.754e-05	6.477e-04	No	1.724e-02	1.047e-01	No
	30-50%	1.467e-02	1.035e-02	Yes	5.984e-03	4.845e-03	No
$\bar{\Lambda} K_S^0$	0-10%	-2.913e-02	1.043e-01	No	9.866e-04	3.005e-04	Yes
	10-30%	2.197e-02	1.242e-02	No	3.265e-02	1.604e-01	No
	30-50%	1.840e-03	2.010e-03	No	4.275e-02	1.307e-02	Yes

**Table 15:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $\pi^- (\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$ DCA to Primary Vertex of  $\pi^- (\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$  500MeVMaxFit SimpleExp

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



DCA to Primary Vertex of  $\pi^+$  Daughter of  $K_S^0$  500MeVMaxFit

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%	-2.608e-02	4.971e-02	No	-7.864e-03	7.668e-03	Yes
	10-30%	-8.553e-03	7.190e-03	No	-5.121e-04	6.840e-04	No
	30-50%	2.406e-03	2.064e-03	No	6.805e-03	2.133e-03	Yes
$\bar{\Lambda} K_S^0$	0-10%	5.941e-04	1.172e-03	No	4.175e-04	4.092e-04	No
	10-30%	4.652e-02	3.458e-01	No	-7.284e-03	1.660e-02	No
	30-50%	2.016e-01	3.865e+00	No	-5.308e-05	2.336e-03	No

**Table 17:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $\pi^+$  Daughter of  $K_S^0$ DCA to Primary Vertex of  $\pi^+$  Daughter of  $K_S^0$  500MeVMaxFit SimpleExp

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

DCA to Primary Vertex of $\pi^-$ Daughter of $K_S^0$ 500MeVMaxFit							
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%	-3.737e-04	2.921e-04	No	3.329e-04	3.135e-04	No
	10-30%	4.062e-04	7.856e-04	No	5.080e-02	3.015e-01	No
	30-50%	4.471e-02	2.576e-02	No	-1.367e-01	1.684e+00	No
$\bar{\Lambda} K_S^0$	0-10%	-6.888e-04	4.034e-04	Yes	9.217e-02	1.088e-01	No
	10-30%	-6.684e-02	6.573e-01	No	1.507e-03	2.286e-03	No
	30-50%	-5.625e-03	7.924e-02	No	2.084e-05	1.285e-03	No

**Table 19:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $\pi^-$  Daughter of  $K_S^0$

DCA to Primary Vertex of $\pi^-$ Daughter of $K_S^0$ 500MeVMaxFit SimpleExp							
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 20:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: DCA to Primary Vertex of  $\pi^-$  Daughter of  $K_S^0$

Avgerage Separation of Like-Charge Daughters 500MeVMaxFit

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%	1.509e-05	3.300e-05	No	5.692e-04	3.758e-04	No
			10-30%	1.981e-05	2.897e-05	No	5.948e-02	7.965e-05	Yes
			30-50%	6.630e-04	6.601e-04	No	7.122e-04	1.322e-04	Yes
$\Lambda K_S^0$	$\pi^-(\Lambda)$	$\pi^-(K_S^0)$	0-10%	5.113e-04	2.177e-04	Yes	-5.775e-05	3.737e-05	No
			10-30%	5.405e-03	1.317e-02	No	7.111e-04	1.293e-04	Yes
			30-50%	4.522e-05	4.113e-05	No	7.746e-05	6.301e-06	Yes
$\bar{\Lambda} K_S^0$	$\pi^+(\bar{\Lambda})$	$\pi^+(K_S^0)$	0-10%	8.959e-04	2.124e-04	Yes	-3.231e-06	3.802e-05	No
			10-30%	8.833e-04	2.599e-04	Yes	1.588e-05	4.047e-05	No
			30-50%	2.309e-02	3.156e-02	No	6.364e-05	5.192e-05	No
$\bar{\Lambda} K_S^0$	$\bar{p}^-(\bar{\Lambda})$	$\pi^-(K_S^0)$	0-10%	1.677e-04	1.092e-04	No	-3.992e-05	3.184e-05	No
			10-30%	1.470e-05	3.656e-05	No	-2.323e-06	9.305e-05	No
			30-50%	7.334e-05	2.896e-05	Yes	5.538e-04	3.085e-04	No

**Table 21:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: Avgerage Separation of Positive Daughters

Avgerage Separation of Like-Charge Daughters 500MeVMaxFit SimpleExp

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 22:**  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: Avgerage Separation of Positive Daughters

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

DCA  $\Lambda(\bar{\Lambda})$  500MeVMaxFit

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		4 vs 5 mm			5 vs 6 mm		
$\Lambda K^+$	0-10%	-2.986e-02	1.645e-01	No	2.006e-03	2.090e-03	Yes
	10-30%	-8.643e-03	1.603e-01	No	7.363e-04	1.788e-03	No
	30-50%	-5.216e-02	5.994e-02	No	-3.451e-02	2.743e-01	No
$\bar{\Lambda} K^-$	0-10%	-3.432e-03	2.215e-02	No	-3.703e-02	2.614e-01	No
	10-30%	-9.909e-04	1.418e-03	No	-3.485e-02	1.963e-01	No
	30-50%	1.579e-03	1.199e-03	No	3.059e-04	1.149e-03	No
$\Lambda K^-$	0-10%	-1.968e-02	1.487e-01	No	2.004e-03	1.465e-03	No
	10-30%	-1.394e-03	1.794e-03	No	-4.588e-04	3.685e-04	No
	30-50%	-1.516e-03	1.011e-03	No	-8.272e-04	7.739e-04	No
$\bar{\Lambda} K^+$	0-10%	-1.016e-02	5.231e-02	No	8.251e-04	1.290e-03	No
	10-30%	-1.407e-02	5.320e-02	No	-7.610e-04	6.160e-04	No
	30-50%	-4.230e-03	4.236e-03	Yes	-2.218e-04	5.994e-04	No

**Table 23:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA  $\Lambda(\bar{\Lambda})$ DCA  $\Lambda(\bar{\Lambda})$  500MeVMaxFit SimpleExp

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

Talk about stuff

DCA  $\Lambda(\bar{\Lambda})$  Daughters 500MeVMaxFit

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		3 vs 4 mm			4 vs 5 mm		
$\Lambda K^+$	0-10%	-1.136e-02	9.416e-03	No	-2.395e-03	1.173e-03	Yes
	10-30%	-2.773e-02	1.091e-01	No	-2.962e-04	1.524e-03	No
	30-50%	1.057e-03	1.241e-03	No	-7.586e-02	3.692e-02	Yes
$\bar{\Lambda} K^-$	0-10%	-7.829e-03	6.509e-03	Yes	-5.710e-04	5.934e-04	No
	10-30%	7.443e-04	8.673e-04	No	1.088e-03	1.168e-03	No
	30-50%	-1.225e-01	4.522e-01	No	2.278e-03	2.851e-03	Yes
$\Lambda K^-$	0-10%	-1.527e-04	1.883e-04	No	-5.835e-04	6.913e-04	No
	10-30%	-5.726e-02	1.965e-01	No	-4.351e-02	2.713e-01	No
	30-50%	-1.140e-02	7.375e-03	Yes	2.958e-02	2.476e-01	No
$\bar{\Lambda} K^+$	0-10%	-3.676e-04	2.325e-04	No	6.753e-03	8.862e-02	No
	10-30%	2.291e-04	3.914e-04	No	-9.527e-04	1.492e-03	No
	30-50%	1.108e-01	6.299e-01	No	4.620e-03	5.502e-03	No

Table 25:  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA  $\Lambda(\bar{\Lambda})$  DaughtersDCA  $\Lambda(\bar{\Lambda})$  Daughters 500MeVMaxFit SimpleExp

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 26:  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA  $\Lambda(\bar{\Lambda})$  Daughters

$\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle 500MeVMaxFit

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%	2.564e-05	7.148e-05	No	5.203e-04	3.676e-04	No
	10-30%	3.322e-02	2.091e-02	No	5.850e-04	8.976e-04	No
	30-50%	4.748e-03	5.643e-03	No	-2.372e-02	8.418e-02	No
$\bar{\Lambda} K^-$	0-10%	4.757e-03	4.395e-02	No	6.412e-04	1.649e-03	No
	10-30%	5.303e-04	1.251e-03	No	3.083e-02	6.150e-03	Yes
	30-50%	1.818e-03	1.113e-03	No	3.013e-05	7.756e-04	No
$\Lambda K^-$	0-10%	-7.716e-03	4.941e-02	No	2.136e-02	1.327e-02	Yes
	10-30%	-2.561e-02	9.671e-02	No	5.935e-03	2.936e-03	Yes
	30-50%	1.166e-04	5.787e-03	No	-8.552e-02	6.472e-01	No
$\bar{\Lambda} K^+$	0-10%	-3.651e-05	9.638e-05	No	7.891e-03	3.091e-02	No
	10-30%	-9.620e-04	1.854e-03	Yes	1.019e-04	1.806e-04	No
	30-50%	1.642e-03	1.472e-03	No	-1.052e-03	2.182e-03	No

**Table 27:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses:  $\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle $\Lambda(\bar{\Lambda})$  Cosine of Pointing Angle 500MeVMaxFit SimpleExp

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

DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$  500MeVMaxFit

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	-1.712e-03	4.803e-04	Yes
	10-30%	-3.081e-08	9.643e-07	No	-7.545e-03	5.625e-03	Yes
	30-50%	0.000e+00	0.000e+00	No	-2.433e-03	1.467e-03	No
$\bar{\Lambda} K^-$	0-10%	0.000e+00	0.000e+00	No	-9.956e-04	1.046e-03	No
	10-30%	0.000e+00	0.000e+00	No	-6.565e-02	3.681e-01	No
	30-50%	0.000e+00	0.000e+00	No	2.580e-02	1.941e-01	No
$\Lambda K^-$	0-10%	0.000e+00	0.000e+00	No	2.999e-03	2.975e-03	No
	10-30%	1.831e-07	1.134e-06	No	5.955e-03	4.628e-03	No
	30-50%	0.000e+00	0.000e+00	No	-2.068e-01	2.323e+00	No
$\bar{\Lambda} K^+$	0-10%	0.000e+00	0.000e+00	No	-4.767e-04	2.701e-04	No
	10-30%	0.000e+00	0.000e+00	No	1.151e-03	1.010e-03	No
	30-50%	0.000e+00	0.000e+00	No	-1.356e-01	1.525e+00	No

**Table 29:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$ DCA to Primary Vertex of  $p^+(\bar{p}^-)$  Daughter of  $\Lambda(\bar{\Lambda})$  500MeVMaxFit SimpleExp

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

DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$  500MeVMaxFit

Pair Type	Centrality	Fit Amplitudes					
		Amplitude	Error	Sig	Amplitude	Error	Sig
		2 vs 3 mm			3 vs 4 mm		
$\Lambda K^+$	0-10%	-2.578e-03	4.473e-02	No	-3.254e-03	4.068e-03	No
	10-30%	5.165e-04	7.025e-04	No	-4.162e-03	3.253e-03	No
	30-50%	1.504e-02	5.178e-03	Yes	-3.467e-02	2.791e-01	No
$\bar{\Lambda} K^-$	0-10%	1.026e-03	1.045e-03	No	-9.881e-03	3.186e-02	No
	10-30%	-1.050e-04	2.779e-04	No	-1.161e-02	6.045e-02	No
	30-50%	5.187e-03	5.521e-03	No	-3.825e-04	1.473e-03	No
$\Lambda K^-$	0-10%	-2.588e-03	3.666e-02	No	-5.881e-03	6.284e-02	No
	10-30%	5.937e-03	2.872e-04	Yes	2.942e-02	1.801e-02	No
	30-50%	3.185e-03	2.838e-03	No	-9.919e-03	9.801e-03	No
$\bar{\Lambda} K^+$	0-10%	-2.047e-04	6.630e-04	No	-3.852e-05	9.646e-05	No
	10-30%	-1.088e-02	2.905e-04	Yes	-3.925e-03	3.920e-03	Yes
	30-50%	1.456e-05	3.774e-04	No	-2.516e-03	2.087e-03	No

**Table 31:**  $\Lambda(\bar{\Lambda})K^\pm$  Analyses: DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$ DCA to Primary Vertex of  $\pi^-(\pi^+)$  Daughter of  $\Lambda(\bar{\Lambda})$  500MeVMaxFit SimpleExp)

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



Average Separation of  $\Lambda(\bar{\Lambda})$  Daughter With Same Charge as  $K^\pm$  500MeVMaxFit

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%	-1.028e-03	1.913e-04	Yes	-8.595e-04	1.950e-04	Yes
			10-30%	-1.165e-04	2.697e-05	Yes	-3.465e-05	2.604e-05	Yes
			30-50%	-1.402e-04	1.330e+01	No	3.312e-05	8.428e-05	No
$\bar{\Lambda} K^-$	$\bar{p}(\bar{\Lambda})$	$K^-$	0-10%	-1.186e-03	2.039e-04	Yes	-1.314e-03	2.545e-04	Yes
			10-30%	-2.705e-05	2.832e-05	Yes	-5.341e-05	2.923e-05	Yes
			30-50%	1.314e-03	1.515e-04	Yes	1.459e-04	8.739e-05	No
$\Lambda K^-$	$\pi^-(\Lambda)$	$K^-$	0-10%	-5.785e-05	1.394e-05	Yes	-4.428e-05	1.198e-05	Yes
			10-30%	-4.576e-05	5.522e-05	No	-5.990e-05	1.099e-05	Yes
			30-50%	4.274e-03	4.150e-03	No	6.659e-05	6.463e-05	No
$\bar{\Lambda} K^+$	$\pi^+(\bar{\Lambda})$	$K^+$	0-10%	-2.609e-04	1.122e-04	Yes	-4.269e-05	3.663e-05	No
			10-30%	-2.366e-04	1.483e-04	Yes	-7.622e-05	1.096e-04	No
			30-50%	2.265e-03	9.486e-04	Yes	2.629e-04	2.138e-04	No

Table 33:  $\Lambda(\bar{\Lambda})K_S^0$  Analyses: Average Separation of  $\Lambda(\bar{\Lambda})$  Daughter With Same Charge as  $K^\pm$ Average Separation of  $\Lambda(\bar{\Lambda})$  Daughter With Same Charge as  $K^\pm$  500MeVMaxFit SimpleExp

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