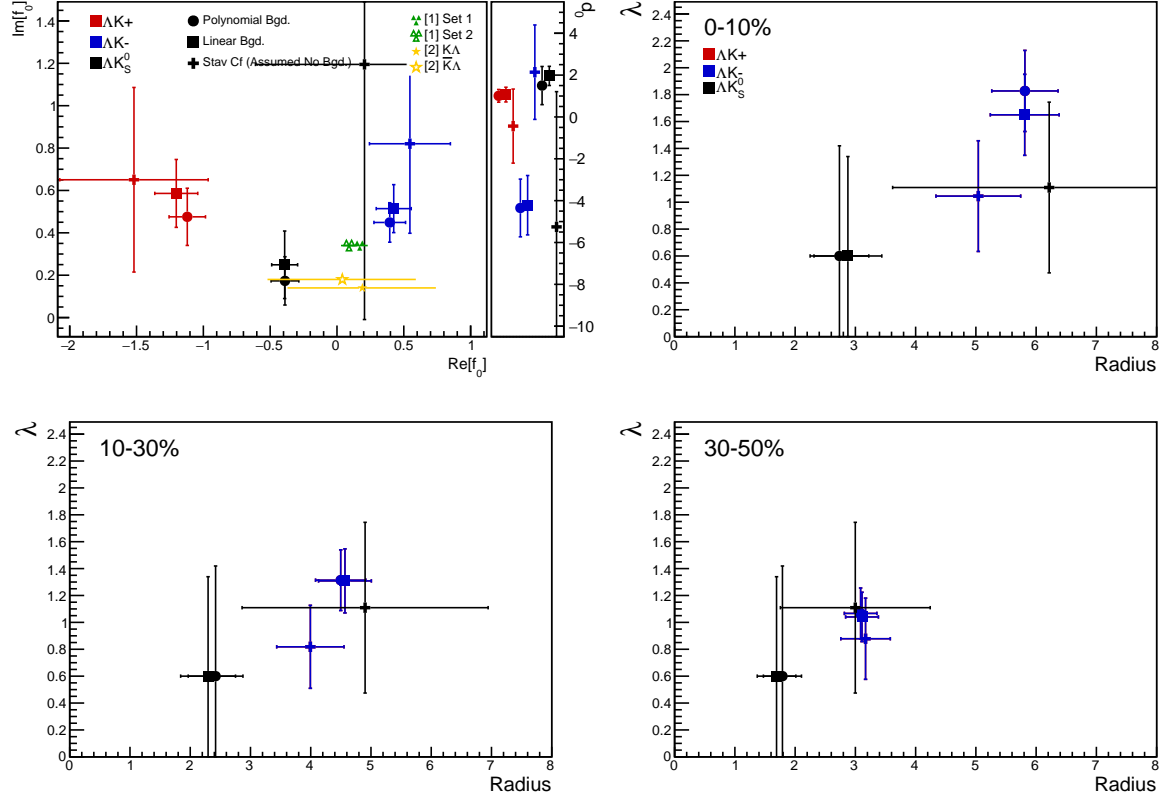
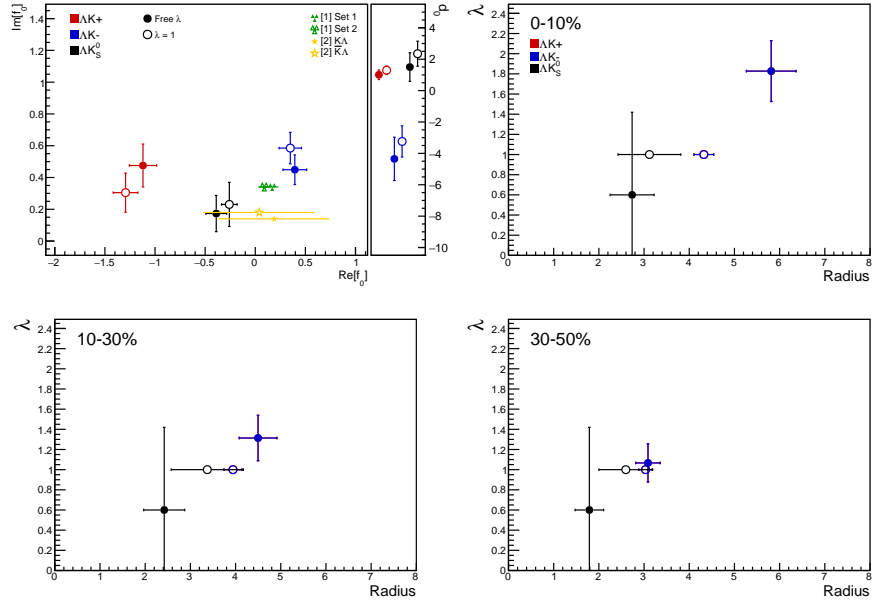


### 0.0.1 Results: $\Lambda K_S^0$ and $\Lambda K^\pm$ : Fit Method Comparisons

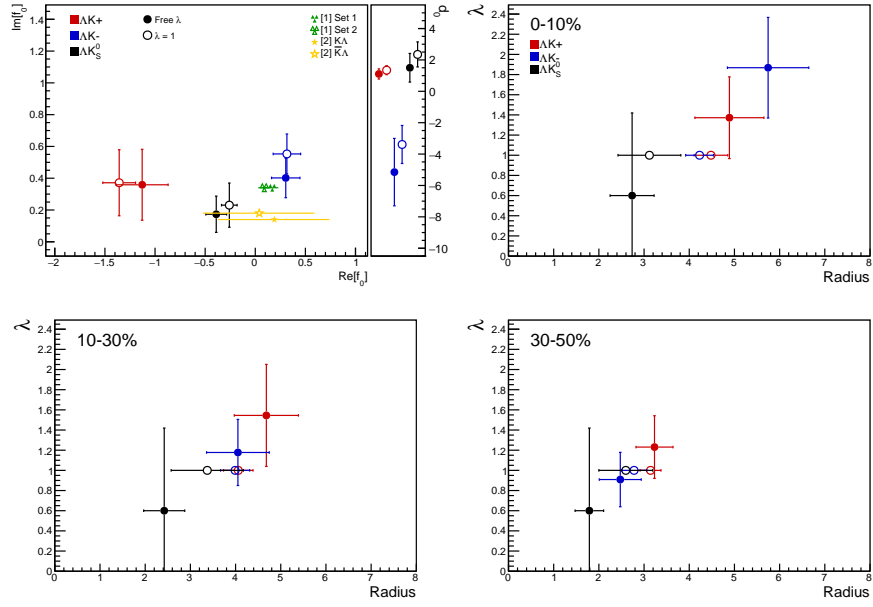
In Figure 1, we show extracted fit parameters for the case of  $\Lambda K^+(\bar{\Lambda} K^-)$  sharing radii with  $\Lambda K^-(\bar{\Lambda} K^+)$ . The figure shows results for three different treatments of the non-femtoscopic background: a polynomial fit to THERMINATOR 2 simulation to model the background (circles), a linear fit to the data to model the background (squares), and the Stavinsky method (crosses).



**Fig. 1:** Extracted fit results for all of our  $\Lambda(\bar{\Lambda})K^\pm$  systems across all studied centrality bins (0-10%, 10-30%, 30-50%). The  $\Lambda K^+(\bar{\Lambda} K^-)$  and  $\Lambda K^-(\bar{\Lambda} K^+)$  systems share both a radius and a  $\lambda$  parameter for each centrality bin (i.e. 3 total radius parameters, 3 total  $\lambda$  parameters). The figure shows results for three different treatments of the non-femtoscopic background: a polynomial fit to THERMINATOR 2 simulation to model the background (circles), a linear fit to the data to model the background (squares), and the Stavinsky method (crosses). Note,  $\Lambda K^+$  on the plot is shorthand for  $\Lambda K^+$  and  $\bar{\Lambda} K^-$  ( $\Lambda K^+(\bar{\Lambda} K^-)$ ), and similar for the others. The green [?] and yellow [?] points show theoretical predictions made using chiral perturbation theory.

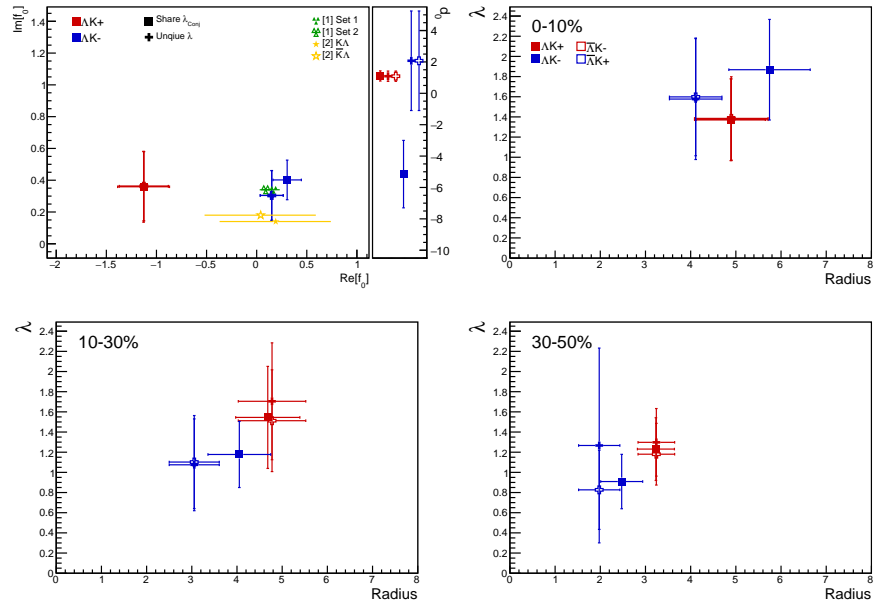
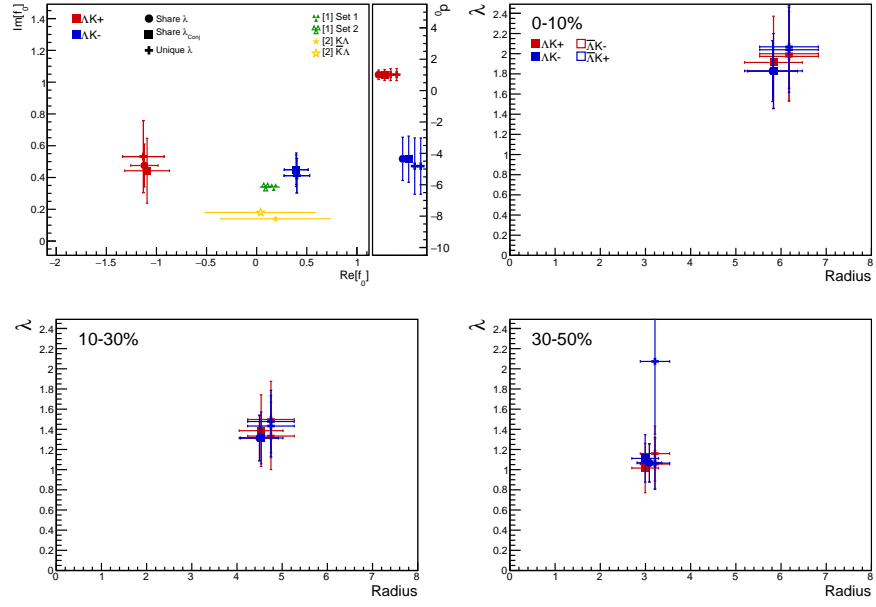


(a) Shared radii

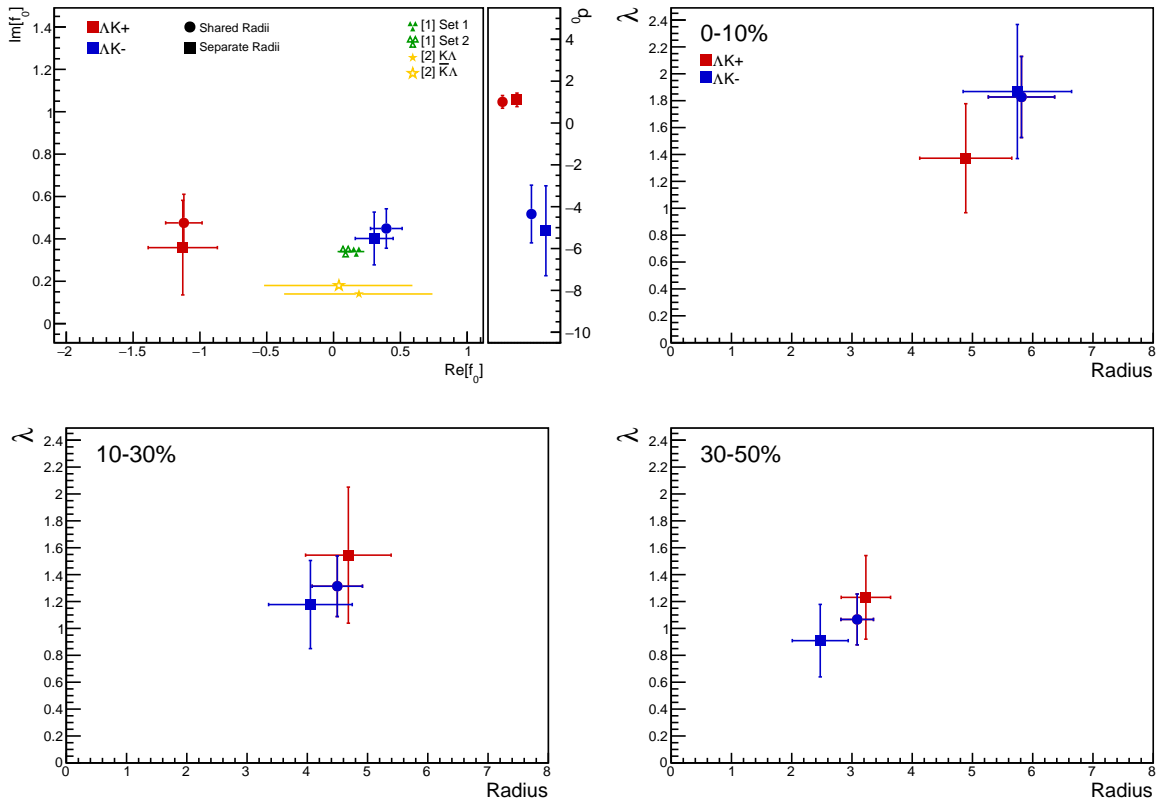


(b) Separate radii

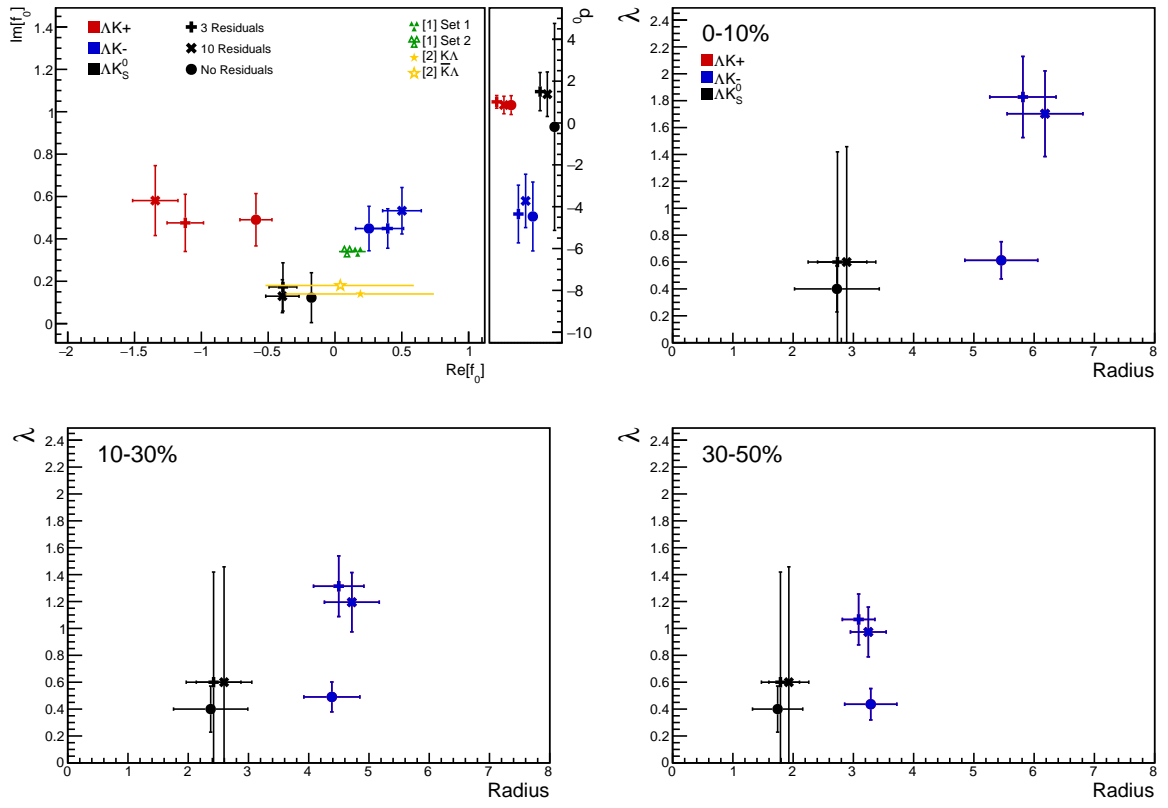
**Fig. 2:** Compare Fit Parameters: Free vs fixed  $\lambda$



**Fig. 3:** Compare Fit Parameters: Shared vs unique  $\lambda$



**Fig. 4:** Compare Fit Parameters: Shared vs. Separate Radii



**Fig. 5:** Compare Fit Parameters: Compare number of residuals