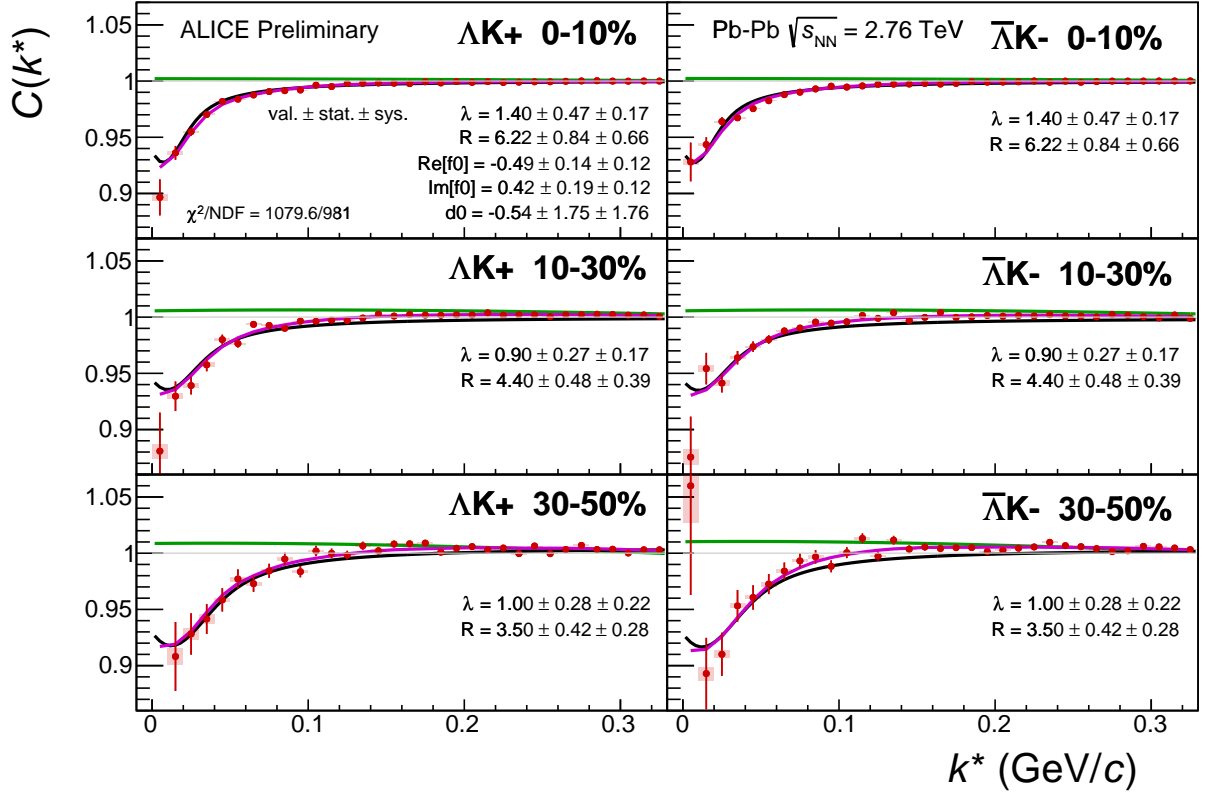


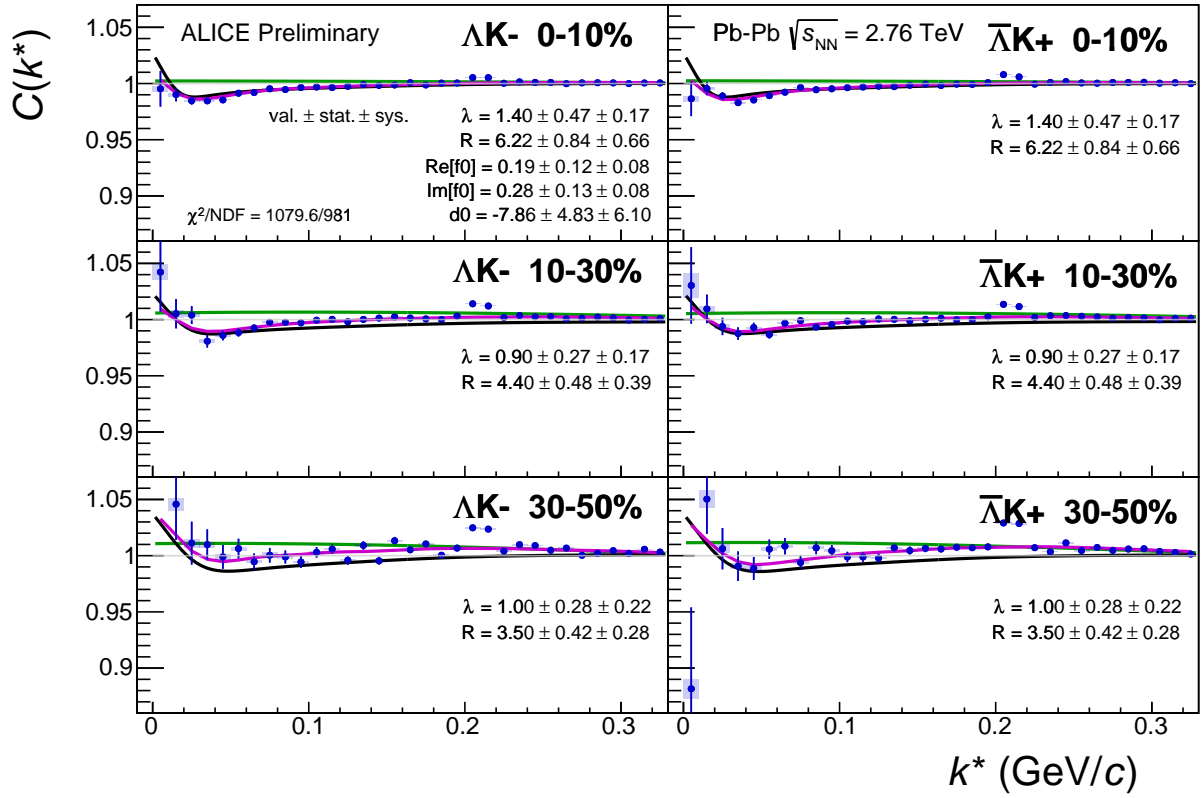
## 0.1 Correlation functions with fits

Figures 1, 2, and 3 show the experimental correlation functions with fits, assuming 3 residual contributors, for all  $\Lambda K$  systems ( $\Lambda K^+$ ,  $\Lambda K^-$ , and  $\Lambda K_S^0$ , respectively) in all studied centralities. The parameter sets extracted from the fits can be found in Table ?? . Figures with a wider range in  $k^*$ , showing better the non-femtoscopic background, may be found in Appendix ?? . Also contained in Appendix ?? are plots demonstrating the contributions from the residuals, as well as results assuming 10 and no residual contributors.

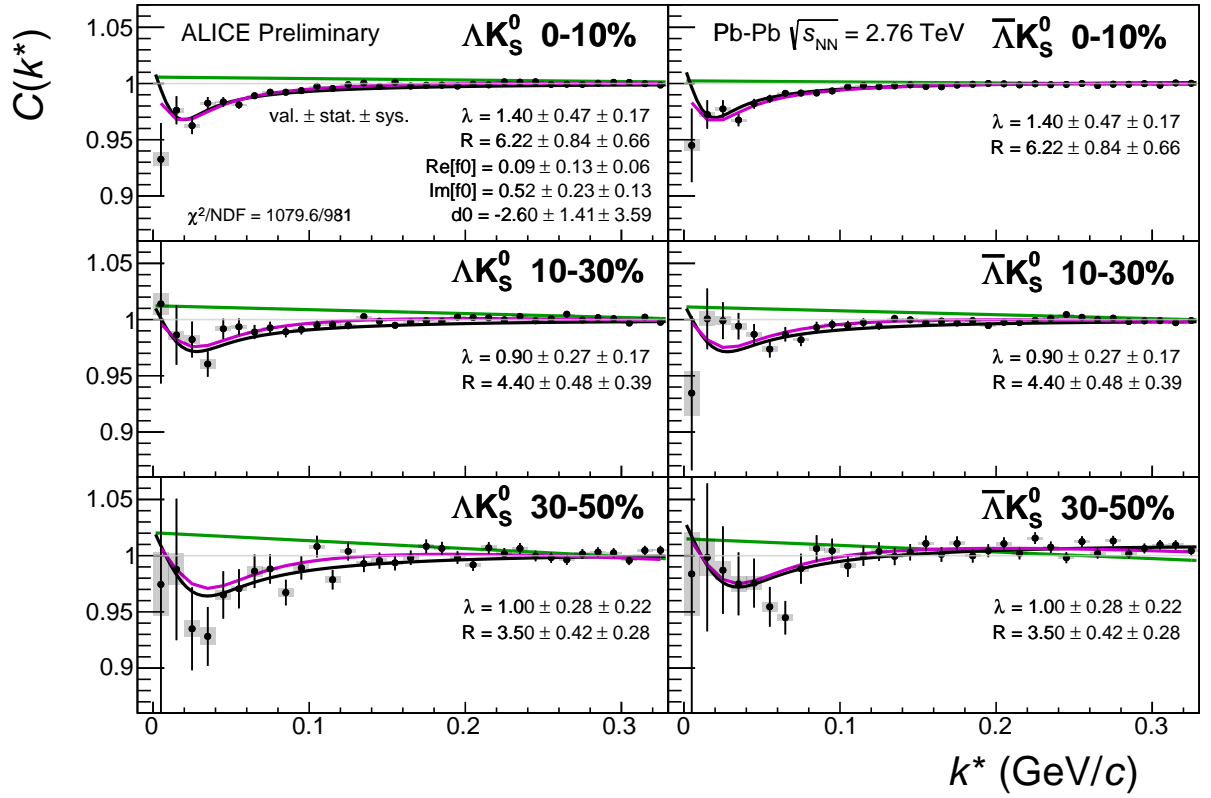
In Figures 1 - 3, the pair system (e.g.  $\Lambda K^+$ ) data is shown in the left column, and the conjugate pair system (e.g.  $\bar{\Lambda} K^-$ ) in the right. The rows differentiate the different centrality bins (0-10% in the top, 10-30% in the middle, and 30-50% in the bottom). The lines on the data represent the statistical errors, while the boxes represent the systematic errors. The fit procedure is as described in the text; in short, all systems are fit simultaneously with shared radii, while each [ $\Lambda K^+$ ,  $\Lambda K^-$ ,  $\Lambda K_S^0$ ] maintains a unique set of scattering parameters. The black solid line represents the primary  $\Lambda K$  component of the fit. The green line shows the fit to the non-flat background. The purple points show the fit after all residuals' contributions have been included, and momentum resolution and non-flat background corrections have been applied. The extracted fit values with uncertainties are printed in the top left panel of each figure.



**Fig. 1:** Fit results, with 3 residual correlations included, for the  $\Lambda K^+$  and  $\bar{\Lambda} K^-$  data. The  $\Lambda K^+$  data is shown in the left column, the  $\bar{\Lambda} K^-$  in the right, and the rows differentiate the different centrality bins (0-10% in the top, 10-30% in the middle, and 30-50% in the bottom). See text for further details.



**Fig. 2:** Fit results, with 3 residual correlations included, for the  $\Lambda K^-$  and  $\bar{\Lambda} K^+$  data. The  $\Lambda K^-$  data is shown in the left column, the  $\bar{\Lambda} K^+$  in the right, and the rows differentiate the different centrality bins (0-10% in the top, 10-30% in the middle, and 30-50% in the bottom). See text for further details.



**Fig. 3:** Fit results, with 3 residual correlations included, for the  $\Lambda K_S^0$  and  $\bar{\Lambda} K_S^0$  data. The  $\Lambda K_S^0$  data is shown in the left column, the  $\bar{\Lambda} K_S^0$  in the right, and the rows differentiate the different centrality bins (0-10% in the top, 10-30% in the middle, and 30-50% in the bottom). See text for further details.