

Systematic Uncertainty

- 4C kinematic fit
 - [chisq scan](#)
 - helix track correction
- [Background \(sideband\)](#)
- I/O check
- E reconstruction

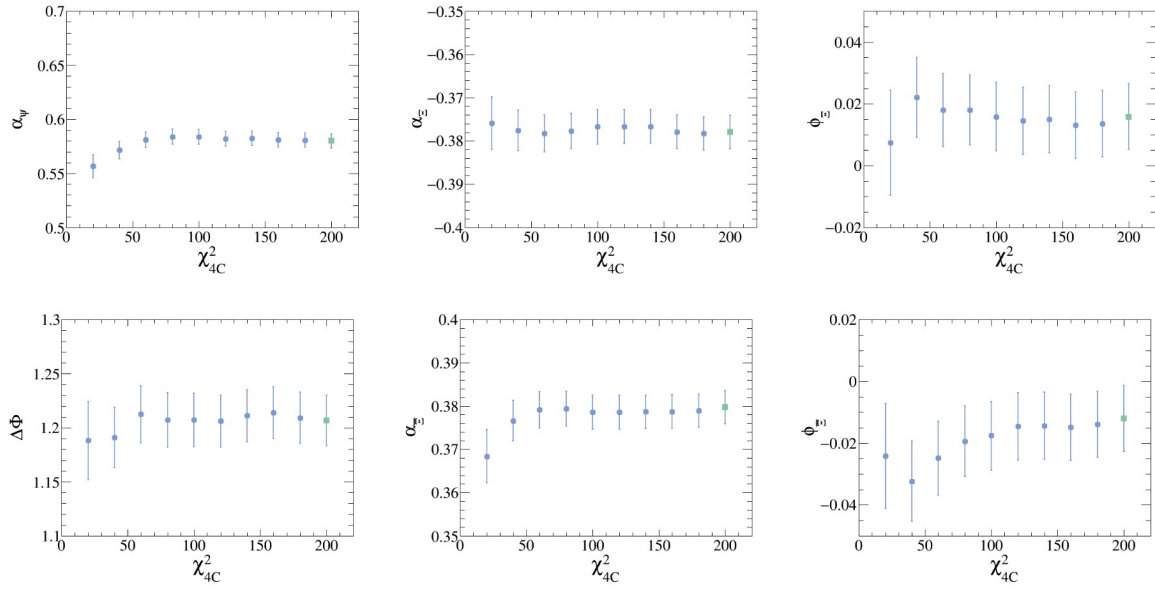


Figure 17: Parameters with different χ^2_{4C} cut values. Green point denotes nominal result, blue points with error bars denote decay parameters in different χ^2_{4C} cut.

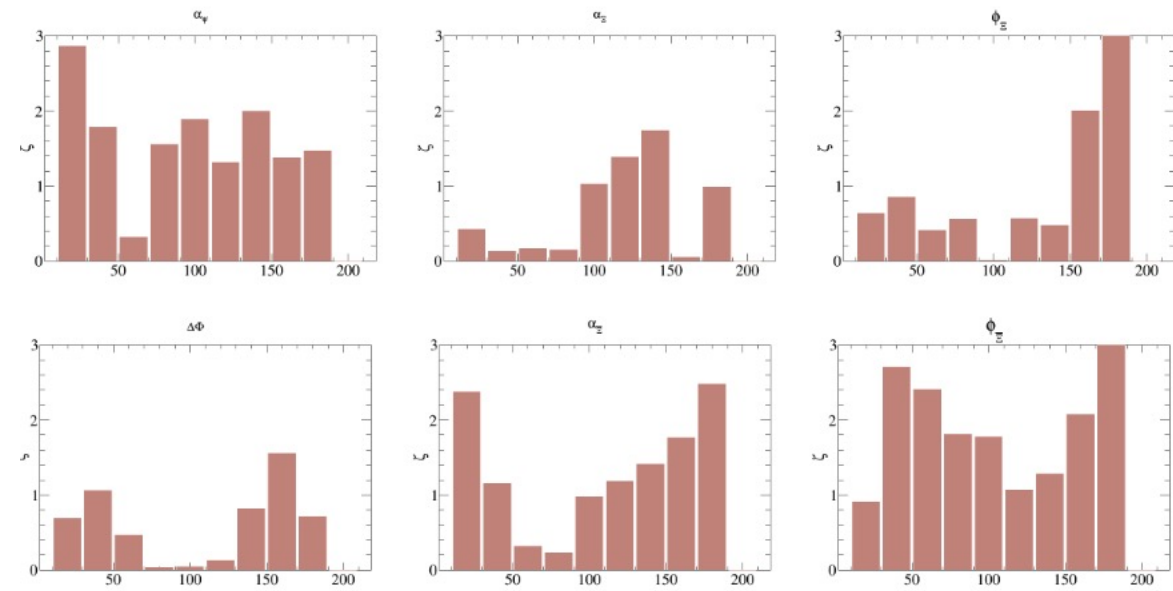
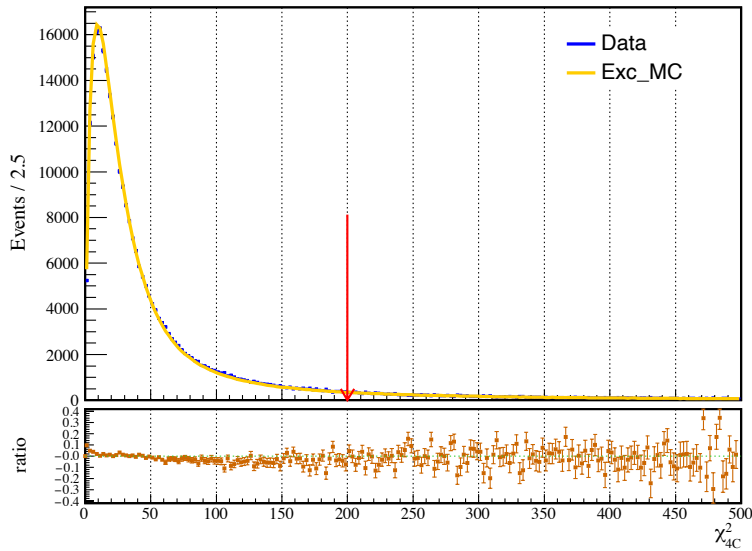


Figure 18: ζ value with different χ^2_{4C} cut values.



Parameters	nominal	average	Systematic Uncertainty
α_{ψ}	0.580	0.581	0.001
$\Delta\Phi$	1.207	1.207	0.000
α_{Ξ^-}	-0.3779	-0.3775	0.0005
$\alpha_{\bar{\Xi}^+}$	0.3797	0.3786	0.0011
Φ_{Ξ^-}	0.0159	0.0163	0.0004
$\Phi_{\bar{\Xi}^+}$	-0.0120	-0.0190	0.0069
α_{Λ}	0.7481	0.7513	0.0032
$\alpha_{\bar{\Lambda}}$	-0.7498	-0.7506	0.0008

Background

$$S = -\ln \mathcal{L}_{data} + \ln \mathcal{L}_{sideband}.$$

Table 5: The systematic uncertainty due to sideband background.

Parameter	Without	With	Absolute difference
α_ψ	0.580	0.586	0.006
$\Delta\Phi$	1.207	0.216	0.009
α_{Ξ^-}	-0.3779	-0.3779	0.0000
α_{Ξ^+}	0.3797	0.3797	0.0000
ϕ_{Ξ^-}	0.0159	0.0158	0.0001
ϕ_{Ξ^+}	-0.0120	-0.0120	0.0000
α_Λ	0.7481	0.7477	0.0003
$\alpha_{\bar{\Lambda}}$	-0.7498	-0.7496	0.0003

Data: 253833

MC: 7232092

bkg: 2100

bkg level: 0.3%