

# Supplementary material for LHCb-PAPER-2020-039

The projections of angle variables used in the amplitude fit are shown in Fig. 1; they are modelled well by the fit.

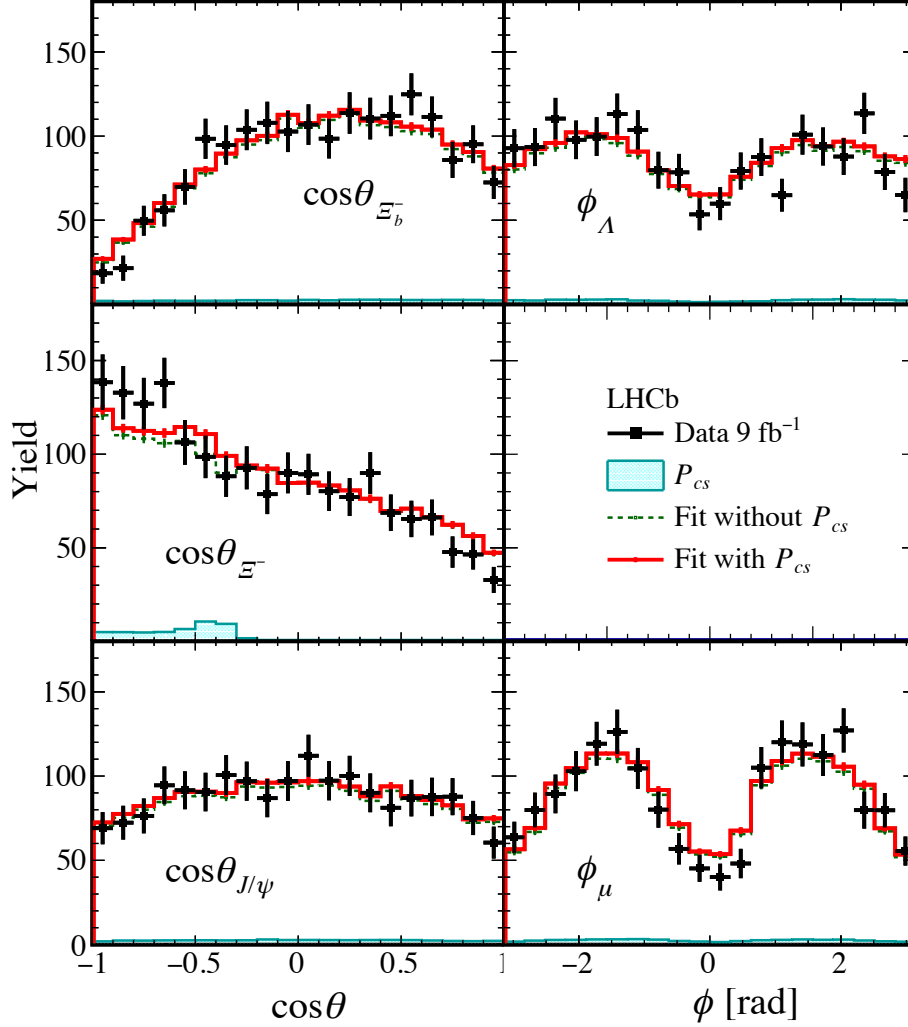


Figure 1: Background-subtracted data and fit projections of decay angles describing the  $\Xi^{*-}$  decay chain, which are included in the amplitude fit. The helicity angle of particle  $P$ ,  $\theta_P$ , is the polar angle in the rest frame of  $P$  between a decay product of  $P$  and the boost direction from the particle decaying to  $P$ . The azimuthal angle between decay planes of the  $\Xi_b^-$  and  $\Xi^-$  ( $J/\psi$ ) particles is denoted as  $\phi_\Lambda$  ( $\phi_\mu$ ). See Ref. [1] for more details.

## References

- [1] LHCb collaboration, R. Aaij *et al.*, *Observation of  $J/\psi$  resonances consistent with pentaquark states in  $\Lambda_b^0 \rightarrow J/\psi p K^-$  decays*, [Phys. Rev. Lett. \*\*115\*\* \(2015\) 072001](#), [arXiv:1507.03414](#).