Determination of the CKM angle γ in $B^{\pm} \to DK^{\pm}, D\pi^{\pm}$ decays and strong phase determination of $D \to K^+K^-\pi^+\pi^-$ at BESIII

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Abstract

Write abstract at the end

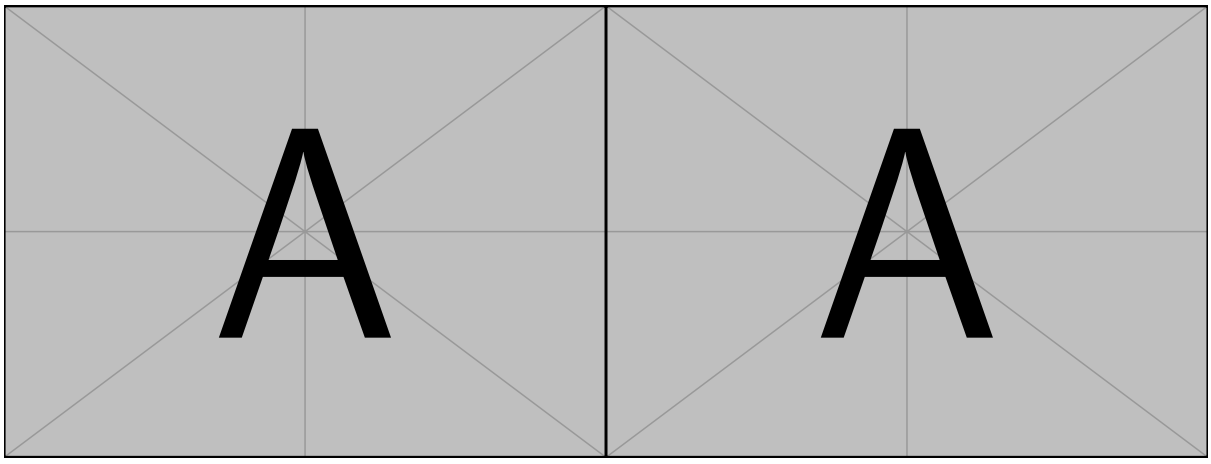
1 Introduction

Introduce γ, GGSZ method and strong phase input from BESIII

Figure 1: Examples of Feynman diagrams for scattering of an electron e^- and a position e^+.

2 LHCb detector

Briefly describe the VELO and RICH



(a) LHCb detector overview **(b)** LHCb detector overview

Figure 2

3 Binning scheme

Describe the binning scheme developed and toy studies for testing it

4 $B^{\pm}$ candidate selection

4.1 Signal candidate requirements

Explain how signal events are selected

Table 1: Requirements

Letter	Numerical value
c	$299\,792\,458\,\mathrm{m\,s^{-1}}$
G	$6.673\,84 \cdot 10^{-11}\,\mathrm{N\,m^2\,kg^{-2}}$
$\hbar$	$1.054\,57 \cdot 10^{-34}\,\mathrm{J\,s}$
k_B	$1.380\,65 \cdot 10^{-23}\,\mathrm{J\,K^{-1}}$
e	$1.602\,18 \cdot 10^{-19}\,\mathrm{C}$

4.2 Background from $D^0 \to K^-\pi^+\pi^-\pi^+$

Show studies of $K3\pi$ contamination

4.3 Charmless backgrounds

Show how flight significance cut removes $B \to KKK\pi\pi$ and mention that $B \to KK\pi\pi\pi$ is insignificant

5 Fit to extract CP observables

5.1 Global fit and invariant mass spectra

State the fit procedure for global fit and show results of global fit for Run 2, including yields

5.2 Binned CP fit and CP observables

Explain the binned CP fit to extract CP observables

5.3 Validation of fit procedure with toy studies

6 Discussion of future work

Discuss the plan further