MR SHENGHUI ZENG

Research interest - Particle Physics

CONTACT

shenghui.zeng@cern.ch

Shenghui_Zeng

+44 7438139561

EDUCATION

B. Sc. - Nuclear Physics — **2019 - 2023**
University of South China - Hengyang, Hunan (China)

Master by research - Physics — **2023 - ongoing**
University of Bristol - Bristol(GB)

RESEARCH EXPERIENCE

Phace-Corrected BPGGSZ measurement on CKM γ through $B^{\mp} \to DK^{\mp}, D \to K_S\pi^+\pi^-$ — **2023-ongoing**
LHCb + BESIII Collaboration

In employing a novel, unbinned, model-independent approach to determine the phase in the decay $D \to K_S\pi^+\pi^-$, we leverage the world's largest data sets from $\Psi(3770)$ threshold experiments at BESIII, along with data from LHCb's run 1, run 2, and the upcoming run 3 datasets. Our aim is to achieve the most precise results on in order to scrutinize the unitarity of the CKM triangle. I am responsible for validating the unbinned method by considering efficiency and background effects.

Test beam analysis of ATLASPix3 telescope — **2022-2023**
CEPC-SiTracker Working group

To meet the design requirements of CEPC, the future Higgs and Z bosons factory, a silicon tracker together with vertex detector and TPC are considered to be the baseline design of the tracking system. This work mainly focuses on the test beam analysis of ATLASPix3.1 telescope, where the performance of the sensor was tested. I run and further develop the analysis software.

Partial Wave Analysis of $\Lambda_c^+ \to \Sigma + hadron$ — **2022-ongoing**
BESIII Collaboration

I performed an analysis on the Cabbibo-favoured decays of $\Lambda_c^+ \to \Sigma\pi\pi$ modes, which are seen as one of the best ways to study Λ^* by its unique isospin filter mechanism. This analysis uses the ML techniques and the TF-PWA tool, on data of Λ_c^+ collected with the BESIII detector. A paper is in preparation.

SCS decays of $\Lambda_c^+ \to \Lambda + hadron$ — **2021-2024**
BESIII Collaboration

In addition, I preformed an analysis on the singly Cabbibo-suppressed decays of Λ_c^+, which final states contain Λ using data collected with the BESIII detector. This work, is now published on Phy. Rev. D.

STRENGTHENS

Leadership
Highly experienced

Innovation
Highly experienced

Physics analysis
Highly experienced

Python
Proficient

C++
Proficient

Linux
Proficient

Video clip
Proficient

WORKSHOPS & CONFERENCES

ACHIEVEMENTS

National research & innovation Grant for undergraduate students

"Search for SCS Decay of Charmed baryon at BESIII"
National level
Program NO:202210555011

Beautiful and Charming Baryon Workshop — **Sep 2024**
IPPP, Durham

Presenter: "Charmed Baryon decays at BESIII"

The 2024 International Workshop on Future Tau Charm Facilities — **Jan 2024**
USTC, Hefei

Attendance

BESIII collaboration meeting in summer 2023 — **Jun 2023**
HNU, Changsha

Attendance

10th Intl. Workshop on Pixel Detectors for Particles and Imaging — **Dec 2022**
Santa Fe, New Mexico, USA

Contributor: "First Results of ATLASPix 3.1 Testbeam"

The 31st international Workshop on Vertex Detector — **Oct 2022**
Tateyama Resort Hotel, Japan

Contributor: "First Results of ATLASPix 3.1 Testbeam"

QCD and New Physics Workshop of BESIII — **Aug 2022**
LZU, Lanzhou

Attendance

"Tian-Wen" forum of Particle physiscs — **Aug 2022**
CSU, Changsha

Presenter: "Recently results of Charmed Baryon decays of BESIII"

BESIII Workshop in Spring of 2022 — **Mar 2022**
Online

Contributor: "Search for Singly-Cabbibo-Suppressed decay of Λ_c^+"

PUBLICATIONS

First observation of $\Lambda_c^+ \to \Lambda K^+\pi^0$ and evidence of $\Lambda_c^+ \to \Lambda K^+\pi^+\pi^-$ — **Published**
Phys. Rev. D 109, 032003 (2024)

First Results of ATLASPix3.1 Testbeam — **Published**
JPSCP.42.011023 (2024)