

Search for rare decays and new physics at BESIII

Tuesday, 13 May 2025 16:15 (20 minutes)

The BESIII experiment has collected 2.7 billion $\psi(3686)$ events, 10 billion J/ψ events, 20 fb^{-1} D meson pairs at 3.773 GeV, and 7.33 fb^{-1} DsD events from 4.128 to 4.226 GeV. The huge data samples allow us to search for rare processes and new physics in charm hadron decays. In this talk, we report the search for FCNC decay in $Ds \rightarrow h(h')e^+e^-$, lepton number violation process $Ds \rightarrow h-h0e^+e^-$ and $\phi \rightarrow \pi^+\pi^+e^-e^-$, and search for J/ψ weak decays containing D meson. We also report the search for BSM particles, including Axion-like particle and dark photon with charmonium data. The BESIII experiment has collected 2.7 billion $\psi(3686)$ events, 10 billion J/ψ events, 20 fb^{-1} D meson pairs at 3.773 GeV, and 7.33 fb^{-1} DsD events from 4.128 to 4.226 GeV. The huge data samples allow us to search for rare processes and new physics in charm hadron decays. In this talk, we report the search for FCNC decay in $Ds \rightarrow h(h')e^+e^-$, lepton number violation process $Ds \rightarrow h-h0e^+e^-$ and $\phi \rightarrow \pi^+\pi^+e^-e^-$, and search for J/ψ weak decays containing D meson. We also report the search for BSM particles, including Axion-like particle and dark photon with charmonium data.

Primary author: LIU, Xueyin (Wuhan University)

Presenter: LIU, Xueyin (Wuhan University)

Session Classification: Parallel II: A