

Studies of pentaquark states with strangeness at LHCb

Friday, June 9, 2023 9:30 AM (30 minutes)

Study of exotic hadrons provides an important perspective on the nature of QCD. Using the pp interaction dataset collected during the Run1 and Run2 data-taking periods, corresponding to an integrated luminosity of 9 fb^{-1} , LHCb established the first evidence of pentaquark with strangeness, $P_{\psi_s}^{\Lambda}(4459)^0$, in $\Xi_b^- \rightarrow J/\psi \Lambda K^-$ decays, and further made the first observation of pentaquark with strangeness, $P_{\psi_s}^{\Lambda}(4338)^0$, in $B^0 \rightarrow J/\psi \Lambda \bar{p}$ decays. This talk will focus on the experimental approach of extracting these pentaquark-candidate signals using LHCb data, and discuss about the potential interpretations about the nature of these exotic states.

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