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Study the particle identification performance for $K_{s^*} \rightarrow \pi^+ \pi^-$ decays using sPlot method

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The $K_{s^*} \rightarrow \pi^+ \pi^-$ sample gives access to low momentum pions, which are useful for studying the particle-identification performance. In this work, we have validated the sPlot technique using Belle II simulated sample for $K_{s^*} \rightarrow \pi^+ \pi^-$ at integrated luminosity of 10fb^{-1} . The Belle II is the upgraded experimental facility at SuperKEKB, KEK, Japan. In this work, we study the relative difference between true efficiencies and that obtained from the sPlot technique for different pion-identification criteria in bins of momentum and cosine of the polar angle. This study is now included as part of the Belle II Systematic Correction Framework.

Session

Future Experiments and Detector Development

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