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[P03] Particle identification in Belle II silicon vertex detector

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Particle identification plays an important role in the physics program of the Belle II experiment at the SuperKEKB asymmetric-energy $e+e-$ collider. We have developed a particle identification (PID) framework based on energy loss information in the silicon-strip vertex detector (SVD) for charged pions, kaons, and protons using $D^*0 \rightarrow D0[\rightarrow K-\pi^+]\pi^+$ and $\Lambda \rightarrow p\pi^-$ decay samples. The study is based on 6.1fb^{-1} data recorded near the $Y(4S)$ resonance by Belle II. The results are compared to those obtained from simulated data. We show that the introduction of additional PID information from the SVD improves the overall PID performance in the low-momentum region.

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