

$\Lambda_c(2595)$ at Belle II: Extending Event Generation with HERWIG

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The Belle II detector is a general-purpose spectrometer built around the interaction point of the asymmetric-energy electron–positron collider SuperKEKB, located in Tsukuba, Japan.

While Belle II is best known as a B-factory, the production rate of charm–anticharm quark pairs at SuperKEKB is slightly higher than that of B -meson pairs.

To date, charm and light quark fragmentation at Belle II has been simulated using PYTHIA 8. However, the implementation of Pythia at Belle II does not account for excited charm baryons. As a result, the development of alternative strategies for studying these baryons has become increasingly important.

In this presentation, I discuss the role of the $\Lambda_c(2595)$ as a possible entry point to improving our understanding of the excited spectrum of charm baryons, and I summarize our progress toward implementing Herwig as a Monte Carlo generator for this purpose within the Belle II software framework.

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