Contribution ID: **35** Type: **not specified**

Search for New Two-Body Decays of B Mesons to $\Omega_c\Lambda$ with Belle

Monday 9 May 2022 15:15 (15 minutes)

We search for the SM decays $\bar{B}^0 \to \bar{\Lambda}^0\Omega_c^0$ and $\bar{B}^0 \to \bar{\Lambda}^0\Omega_c(2770)^0$, and BSM decays $\bar{B}^0 \to \bar{\Lambda}^0\bar{\Omega}_c^0$ and $\bar{B}^0 \to \bar{\Lambda}^0\bar{\Omega}_c(2770)^0$ using the full Belle data sample of 711˜fb^{-1} that contains 772 million $B\bar{B}$ pairs collected at the $\Upsilon(4S)$ resonance with the Belle detector at KEKB asymmetric-energy electron-positron collider. The former two non-factorizable W-emission decays are suppressed in the Standard Model, could be used to understand the predictions of QCD-inspired models and, when discovered, would become a useful tool to search for baryon-antibaryon oscillations, therefore helping to explain matter-antimatter asymmetry. The observation of the latter two final states would either indicate an SM decay followed by baryon-antibaryon oscillations or be the result of a direct BSM transition.

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Session Classification: Flavor I