

Production rates of hyperons and charmed baryons in e^+e^- collision at Belle

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Inclusive baryon production in the jet events from e^+e^- collision was studied at $\Upsilon(4S)$ energy by ARGUS and CLEO collaborations. The production rates divided by spin multiplicity showed a clear dependence on the exponential of baryon masses.

Among them, $\Lambda(1116)$ and $\Lambda(1520)$ seemed to have higher production rates. Some theorists suggested diquark correlation in Λ may explain these phenomena, since Λ is spin-flavor singlet, and correlation between u and d quark is expected. However, the statistics and particle identification power were not sufficient to be conclusive.

In addition, charmed baryons may contain stronger diquark component since color-spin interaction between the charm quark and light quarks is suppressed due to the heavy mass of charm quark. Thus it is interesting to measure production rates of charmed baryons.

Recently, Belle experiment has collected huge number of baryon production with excellent particle identification. We have studied production rates of hyperons and charmed baryons using Belle data to confirm previous observation. In addition, we have performed the first systematic study of production rates of charmed baryons. We have observed very interesting features both for hyperons and charmed baryons.

In this presentation, we'll report preliminary results of our analysis.

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