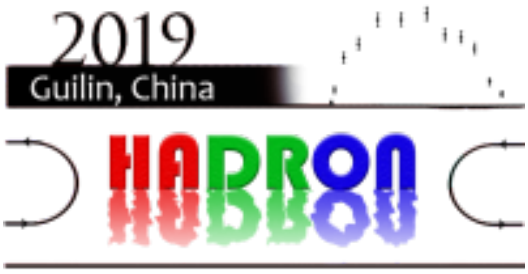

Contribution ID: **58** Type: **Parallel**

Production of $N^*(1535)$ and $N^*(1650)$ in $\Lambda_c \to \bar{K}^0 \eta p$ (πN) decay

Tuesday, August 20, 2019 5:20 PM (20 minutes)

In order to study the properties of the $N^*(1535)$ and $N^*(1650)$ we calculate the mass distributions of MB in the ${}_c \to \bar{K}^0 MB$ decay, with $MB = \pi N(I = 1/2)$, ηp and $K\Sigma(I = 1/2)$. We do this by calculating the tree-level and loop contributions, mixing pseudoscalar-baryon and vector-baryon channels using the local hidden gauge formalism. The loop contributions for each channel are calculated using the chiral unitary approach. We observe that for the ηN mass distribution only the $N^*(1535)$ is seen, with the $N^*(1650)$ contributing to the width of the curve, but for the πN mass distribution both resonances are clearly visible. In the case of $MB = K\Sigma$, we found that the strength of the $K\Sigma$ mass distribution is smaller than that of the mass distributions of the πN and ηp in the $\Lambda_c \to \bar{K}^0 \pi N$ and $\Lambda_c \to \bar{K}^0 \eta p$ processes, in spite of this channel having a large coupling to the $N^*(1650)$. This is because the $K\Sigma$ pair production is suppressed in the primary productionfrom the Λ_c decay.

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