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Short-range part of Y_cN interactions in the Quark Cluster Model
SACHIKO FUKINO, MAKOTO OKA, Tokyo Institute of Technology, SACHIKO TAKEUCHI, Japan College of Social Work — The interaction of hyperons which contain the strange quark has been studied in detail. It is interesting to extend the study to the charmed baryons and to search for their bound states to nucleus. As the basis, it is important to understand the interaction between the charmed baryon Y_c and the nucleon N. In this study, we consider the interaction between Y_c (Λ_c, Σ_c, Σ_c^*) and N. The phenomenological models of the Y_cN interaction have been constructed on the basis of the one-boson exchange. However, the short-range parts of the interaction have not been explored well. Here we use the quark cluster model and calculate the short-range part of the Y_cN interaction by treating the baryons as three-quark clusters. Due to the quark antisymmetrization, we obtain a non-local potential between Y_c and N. Comparison of the results to those in the strange baryons will be discussed in this talk.

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