$Y_cNN$ 3-body charmed nuclei with channel coupling SAORI MAEDA, AKIRA YOKOTA, Tokyo Institute of Technology, EMIKO HIYAMA, RIKEN Nishina Center, MAKOTO OKA, Tokyo Institute of Technology, YAN-RUI LIU, Shandong University, KENJI FUKUKAWA, Catania University INFN —

Binding energies of $Y_cNN$ 3-body charmed nuclei are studied in a potential model. We take into account couplings of channels with $\Lambda_c$, $\Sigma_c$ and $\Sigma_c^*$ (spin 3/2). Since the mass difference between $\Sigma_c$ and $\Sigma_c^*$ is small, the effect of $\Sigma_c^*$ coupling is important.

Between a charm baryon and a nucleon, we use $Y_cN$-CTNN potential, which consists of One Boson Exchange potential supplemented by the short-range repulsion from the Quark Cluster Model. Coupling constants and cut-off parameters are fixed so as to be consistent with the N-N interaction. Accordingly, the CTNN potential has four versions, two of which give a bound $\Lambda_cN$ ($^3S_1$) state. We also include the Coulomb interaction for the charged charmed baryon and the proton. We find a bound state in the three-body system, when we use an effective one-body potential for $\Lambda_cN$, as a preliminary calculation. We will report the results of the full three-body calculation.

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