Abstract Submitted
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Study of double-antikaonic K^-K^-p cluster: numerical benchmarks[1] SH.M. TSIKLAURI, R.YA. KEZERASHVILI, The City University of New York, I. FILIKHIN, V.M. SUSLOV, B. VLAHOVIC, North Carolina Central University — A double-antikaonic cluster K^-K^-p is studied using two different methods: the method of hyperspherical functions in momentum representation and method of the Faddeev equations in configuration space. Binding energy and width of the system K^-K^-p is calculated by employing the energy dependent chiral KN interaction, as well as a phenomenological KN potential. The ground state energy shows very strong dependence on the antikaon-nucleon potential, as well as the extreme sensitivity of the width to the K^-p potential. The energy of the ground state calculated for the energy independent KN interaction is more than three times bigger than one obtained for the energy dependent chiral KN potential. The energies of the ground state obtained in both methods are in a reasonable agreement. Cluster approach for the Faddeev equations was applied to demonstrate contributions of the configurations $(K^-K^-)+p$ and $(K^-p)^{singlet}+K^-$, $(K^-p)^{triplet}+K^-$ to total wave function of the system. The comparison of our results with calculations within variational methods and the Faddeev equations in momentum representation is presented.

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