Abstract Submitted
for the APR12 Meeting of
The American Physical Society

Cluster calculations for the ^{6}He and ^{9}Be spectra[1] IGOR FILIKHIN, VLADIMIR SUSLOV, BRANISLAV VLAHOVIC, North Carolina Central University — The ^{6}He and ^{9}Be nuclei are considered as a mirror cluster systems αnn and $\alpha\alpha n$. The excitation energies of the low-lying levels for ^{6}He and ^{9}Be nuclei are evaluated. These cluster calculations are based on the configuration-space Faddeev equations. The method of analytical continuation in a coupling constant is used to calculate resonance parameters [1]. Our goal is to show possibility for a reliable description of the ^{6}He and ^{9}Be within the cluster model using pair local potentials. We focus on the new αn interaction model proposed in [1]. We assume that both, central p-wave component and spin-orbital component of αn potential mainly determine the excitation spectra structure of these nuclei. The low-lying spectrum of ^{9}Be is well reproduced with this potential. The results for excitation resonance energies of the $\alpha nn(0+,2+,1+)$ systems are presented and compared with the experimental data (http://www.tunl.duke.edu/nucldata/chain/06.shtml) and those from other calculations [2].

[1] I. Filikhin, V.M. Suslov and B. Vlahovic, Few-Body Systems 50, 255 (2011).
[2] S.N. Ershov, T. Rogde, B.V. Danilin, J.S. Vaagen, I.J. Thompson, F.A. Gareev, Phys. Rev. C 56, 1483 (1997).

[1]This work is supported by NSF CREST HRD-0833184 and NASA NNX09AV07A.

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Date submitted: 06 Jan 2012 Electronic form version 1.4