Abstract Submitted
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A Cluster Model of ^{6}He and ^{6}Li[1] JEREMY ARMSTRONG, NSCL and Department of Physics and Astronomy, Michigan State University, ALEXANDER SAKHARUK, Division of Ecological Studies, Florida Gulf Coast University, VLADIMIR ZELEVINSKY, NSCL and Department of Physics and Astronomy, Michigan State University — Small nuclei provide an ideal testing ground of few-body theories. ^{6}He is particularly interesting in that it shows an extended particle distribution similar to a halo nucleus, is loosely bound, and is a Borromean system. We apply the Brink Formalism in secondary quantization to study the structure of ^{6}He. This formalism allows for the proper treatment of Fermi statistics and correct projection into eigenstates of angular momentum. The alpha plus dineutron configuration and "cigar" (neutron, alpha, neutron chain) configuration were studied to obtain binding energies, charge radii, matter radii, and B(E2) for ^{6}He. The same configurations were used to obtain the same observables for ^{6}Li. We were then able to calculate the log ft value for the beta decay of ^{6}He. We now examine the effects of different nucleon-nucleon interactions on our systems.

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