CAN TETRANEUTRON EXIST FROM THEORETICAL POINT OF VIEW?

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S u m m a r y

To study the problem of the possible existence of a tetraneutron, we show that a system of four Fermi-particles can be bound, whereas two-particle subsystems are unbound in the case where the pairwise interaction potential contains two attractive wells separated by a repulsive barrier. We fit the parameters of the proposed class of potentials by the low-energy neutron-neutron parameters and study the properties of a hypothetical tetraneutron. The anomalous behaviours are revealed for the calculated size, density distribution, and pair correlation functions of the hypothetical "tetraneutron" within the proposed models of interaction.