

Abstract Submitted
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Pairing correlations in deformed nuclei close to the neutron drip line MASAYUKI YAMAGAMI, RIKEN — Study of pairing correlations in nuclei close to the neutron drip line is an extensively investigated subject currently. The presence of loosely-bound neutrons and the coupling to the nearby continuum enhance di-neutron correlations [1]. On the other hand, pairing correlations cause the change of the spatial structure of quasiparticle wave functions, and the correlations among the resultant two-quasiparticle states of low- ℓ neutrons lead to the large transition strength of the low-frequency shape oscillations in neutron drip line nuclei [2]. At present, however, these studies are restricted only for spherical nuclei. In my talk, by solving Hartree-Fock-Bogoliubov equation in coordinate space allowing axially symmetric deformation, the pairing effects in deformed neutron drip line nuclei is analyzed paying special attention to neutrons with small Ω , that is the projection of the single-particle angular momentum along the symmetry axis, in connection with the possibility of neutron halos in medium mass and heavier neutron-rich nuclei.

[1] M. Matsuo, K. Mizuyama, and Y. Serizawa, preprint nucl-th/0408052.

[2] M. Yamagami, preprint nucl-th/0504059.

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