

Systematic treatment of odd-mass nuclei in Hartree-Fock-Bogoliubov calculation

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Odd-mass nuclei are different from even-even nuclei in having finite spins in the ground state and breaking time-reversal symmetry. These differences make odd-mass nuclei more interesting and at the same time more difficult to study. Conventionally, an odd-particle system in Hartree-Fock-Bogoliubov theory or density functional theory is treated as a one-quasiparticle excited state on the neighbor even-particle vacuum. The unequal treatment between odd and even particle systems prevents the systematic study of odd-mass nuclei. I present the method of treating odd and even particle systems uniformly in Hartree-Fock-Bogoliubov calculation, showing calculation results.

Primary author: Mr KASUYA, Haruki (Yukawa Institute for Theoretical Physics, Kyoto University)

Presenter: Mr KASUYA, Haruki (Yukawa Institute for Theoretical Physics, Kyoto University)

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