

Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

The study of the effect of the tensor force using the charge- and parity-projected Hartree-Fock method SATORU SUGIMOTO, Kyoto University, KIYOMI IKEDA, The Institute of Physical and Chemical Research (RIKEN), HIROSHI TOKI, RCNP, Osaka University — The tensor force is very important in nuclear structure. It is known that the tensor force plays the decisive role in the binding mechanism of nuclei. Recently we proposed the mean-field-type framework which can take into account the correlation induced by the tensor force by introducing single-particle states with parity and charge mixings. Because the total wave function made from such single-particle states does not have good parity and a charge number, the parity and charge projections are performed. By taking a variation of the total energy calculated with the projected wave function with respect to a single-particle state, we obtain a Hartree-Fock-like equation, the charge- and parity-projected Hartree-Fock (CPPHF) equation. We applied the CPPHF equation to the alpha particle and found that the finite tensor correlation energy is obtained with our method. We applied the CPPHF method to oxygen isotopes and studied the effect of the tensor force on the binding energy. We also calculated the 1-particle and 1-hole states in this region to study the effect of the tensor correlation on single-particle ls splitting.

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Date submitted: 25 May 2005

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