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Ground and single-particle properties in Gogny+Tensor meanfield calculations DAISUKE ABE, TAKAHARU OTSUKA, Department of Physics, University of Tokyo — In the study of the nuclear structure with the meanfield method, the D1S interaction as the standard Gogny-type effective interaction has been used. The results obtained from D1S are generally in good agreement with the experimental data. But some behaviors of D1S results are not so close to experiments. We have therefore proposed a new Gogny-type interaction 'GT2'. GT2 is similar to D1S in many respects, but the tensor term is introduced and the parameters are modified to remedy certain shortcomings. The tensor force plays an important role in the structure of nuclei. So it is essential for us to take into account the tensor force. We showed the data calculated with D1S and GT2. The difference between proton and neutron single-particle energies $h_{11/2}$ and $g_{7/2}$ of Sb isotope was investigated. We found the tensor force and the effect of neutron skin resulted in the interesting interplay. In this study, we shall present some results calculated from GT2. The isotope shifts of Ca and Pb will be included. The isotope shift means the changes of the nuclear charge radii with increasing neutron number. In the case of Ca and Pb, the experimental data show unusual behaviors. We study such isotope shifts by using GT2. We further discuss some properties of exotic nuclei, focusing on the competition between tensor-force effect and neutron-skin effect.

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