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Probing the chiral three-nucleon force effects on many-body nuclear reactions KOSHO MINOMO, Research Center for Nuclear Physics (RCNP), Osaka University, MASAKZU TOYOKAWA, Kyushu University, MICHIO KOHNO, Research Center for Nuclear Physics (RCNP), Osaka University, MASANOBU YAHIRO, Kyushu University, KAZUYUKI OGATA, Research Center for Nuclear Physics (RCNP), Osaka University — Understanding of the roles of three-nucleon force (3NF) in nuclear few- and many-body systems is one of the fundamental subjects in nuclear physics. Recently, the 3NF is determined by chiral effective field theory in which two-, three-, and many-nucleon forces are treated consistently and systematically. To investigate the roles of a chiral 3NF on many-body nuclear reactions, we construct a microscopic reaction theory based on the g-matrix interaction including the effects of a chiral 3NF. In the framework, the 3NF effects appear through the density dependence of the g-matrix. I show the first investigation of the chiral 3NF effects on nucleus-nucleus elastic and inelastic scattering, and nucleon-knockout reactions.

Kosho Minomo
Research Center for Nuclear Physics (RCNP), Osaka University

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