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Recent progress of nuclear matter EOS and cluster studies via direct nuclear reactions (online)

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Nuclear many-body system is a self-organizing active matter, which has seemingly contradictory aspects of uniform single-particle matter and non-uniform cluster-forming matter. Recently, we have launched two complementary experimental programs "ESPRI/ONOKORO" to study uniform/non-uniform properties in nuclei and nuclear matter. In the projects, direct reaction methods with hadronic probes at intermediate energy have been developed to extract fundamental quantities in nuclei like isovector nucleon density distributions and cluster formation probabilities. In this talk, the recent progress of the projects and the future plans will be presented.

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