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Direct Reactions studies at RIBF new facility

TOHRU MOTOBAYASHI, RIKEN Nishina Center

The RIKEN RI Beam Factory (RIBF) is the first realization of new-generation facilities with beams of unstable nuclei. It is based on heavy-ion primary beams accelerated to 345 MeV/nucleon for all elements up to uranium. When the goal intensity, 1 pμA, is reached, RIBF allows production of about thousand new isotopes with the yield higher than 1 particle per day. Since the RI beam energy after production by in-flight fission and/or projectile fragmentation is around 200-300 MeV/nucleon, the direct reaction is one of the useful processes for spectroscopy of nuclei very far from the stability. Several experiments were proposed and a few of them have been performed with intense (currently) ^{48}Ca primary beams. The ZeroDegree Spectrometer, which is already operational, can be used to identify the product of a direct reaction in inverse kinematics coupled with, for example, measurement of γ -rays from excited states in the product. Construction of SAMURAI, a large-acceptance spectrometer, has been started. Decays of unbound states or breakup products from various types of direct reaction will be measured in coincidence. Experimental and theoretical issues to be considered for the specific conditions in this new opportunity will be discussed together with brief overview of near-term research.