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Direct studies of neutron-induced reactions in inverse kinematics SHEA MOSBY, AARON COUTURE, MICHELLE MOSBY, Los Alamos National Laboratory, RENE REIFARTH, Goethe-Universitat Frankfurt — Some of the major questions in both nuclear astrophysics and nuclear technology depend on neutron-induced reaction rates which are largely unknown, on nuclei which are too short-lived to directly measure with existing experimental methods. Indirect methods have progressed, by either attempting to determine the reaction rate explicitly or by constraining nuclear structure for reaction models. Despite this progress, systematic uncertainties associated with the techniques remain a persistent issue. It has been shown that the combination of a radioactive beam facility, ion storage ring, and spallation neutron source could enable direct measurements of neutron-induced reaction rates for nuclei with half-lives as short as minutes or less. We have analyzed the feasibility of this technique using the LANSCE accelerator complex as a baseline. The technique and initial results from the feasibility analysis will be presented.

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