DNP17-2017-000062

Abstract for an Invited Paper
for the DNP17 Meeting of
the American Physical Society

Direct Reactions for Nuclear Astrophysics studies[1]

SERGIO ALMARAZ-CALDERON, Florida State University

Direct reactions have long been considered attractive and powerful tools to study nuclear structure, nuclear reactions and nuclear astrophysics phenomena. Critical astrophysical reactions are often governed by short-lived nuclei away from stability. Great progress has been made with the development of radioactive beams. However, the direct measurement of some crucial astrophysical reactions is still unfeasible. Direct reactions are often an alternative method which allows to extract astrophysically relevant reaction rates by studying the structure of the nuclei involved. In this talk, I will review some recent efforts in experimental techniques using direct reactions to constraint astrophysical reaction rates. Results from a novel experiment to understand the destruction of Galactic ^{26}Al via radiative proton captures on its isomeric 0^+ state will be presented.

[1]This work was partially supported by the State of Florida, and the US Department of Energy, Office of Nuclear Physics, under Contracts No. DEAC02-06CH11357 and DE-FG02-96ER40978. This research used resources of ANL's ATLAS facility, which is a DOE Office