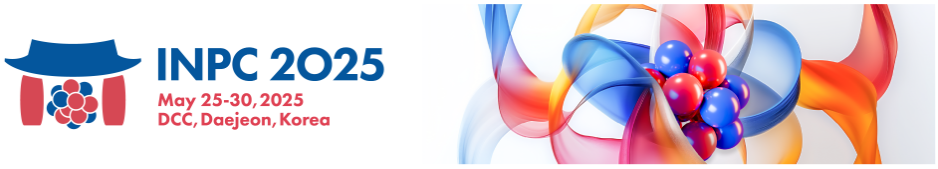

Contribution ID: **275** Type: **Contributed Oral Presentation**

Spectroscopy of rare isotopes with the Active Target Time Projection Chamber

Monday, 26 May 2025 16:30 (15 minutes)

The Active Target Time Projection Chamber (AT-TPC) has been used in experiments aimed at the exploration of structural effects in radioactive nuclei using one step reactions such as transfer or elastic and inelastic scattering. When used as a solenoidal spectrometer by placing it inside a magnetic field, the AT-TPC allows to perform this type of measurement in inverse kinematics with much reduced beam intensities, down to 100 particles per second, while preserving a good resolution and a wide range of angular coverage. This presentation will showcase the performance of this detector, based on recent results obtained on nuclei in the beryllium to carbon region using pure proton, deuterium and alpha targets. This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics, under Contract No. DE-AC02- 06CH11357. This research used resources of ANL's ATLAS facility, which is a DOE Office of Science User Facility and used resources of the Facility for Rare Isotope Beams (FRIB) Operations, which is a DOE Office of Science User Facility under Award Number DE-SC0023633.

Primary author: BAZIN, Daniel (Michigan State University)

Co-authors: KAY, Benjamin (Physics Division, Argonne National Laboratory, Argonne, IL 60439); CHEN, Jie (Southern University of Science and Technology); Prof. MITTIG, Wolfgang (Michigan State University); AYYAD, Yassid (University of Santiago de Compostela)

Presenter: BAZIN, Daniel (Michigan State University)

Session Classification: Parallel Session

Track Classification: Nuclear Structure