## **DREB2022** - Direct Reactions with Exotic Beams



Contribution ID: 223

Type: Oral contribution

## **Direct reactions studies with the AT-TPC**

Thursday 30 June 2022 18:10 (20 minutes)

The Active Target Time Projection Chamber (AT-TPC) has been used successfully in a number of pioneering experiments ranging from resonant scattering to high energy charge exchange. The key experimental factor common to these experiments is the detection of low energy recoils in a thick target without loss of resolution. The high luminosity provided by this methodology extends the scientific reach of rare isotope facilities by enabling the use of reaction tools at lower intensities compared with passive target setups. This talk will present an overview of the recent accomplishments of the AT-TPC, with an emphasis on the latest experiment aimed at the commissioning of transfer reactions using the <sup>10</sup>Be(d,p)<sup>11</sup>Be reaction in inverse kinematics. The secondary goal of this experiment is to verify the parity of the 3.41 MeV J=3/2 resonance in <sup>11</sup>Be. The AT-TPC was filled with 600 Torr of pure deuterium gas and placed in SOLARIS while a <sup>10</sup>Be beam was accelerated to 10 MeV/u by the ReA6 linac of FRIB. Preliminary results on the (d,p) transfer reaction channel obtained with an average of 1000 beam particles per second will be presented.

## Topic

Experiment

## Author: BAZIN, Daniel (FRIB/MSU)

**Co-authors:** AHN, Tan; AYYAD, Yassid (Facility for rare Isotope Beams); CHEN, Jie (Argonne National Laboratory); HOFFMAN, Calem R. (Argonne National Laboratory (US)); KAY, Benjamin (Argonne National Laboratory); MACCHIAVELLI, Augusto (Lawrence Berkeley National Laboratory); MITTIG, Wolfgang; PEREIRA, Jorge (NSCL/MSU); WUOSMAA, Alan; RIJAL, Nabin (FRIB/MSU); SANTAMARIA, Clémentine (Morgan University); ZAMORA, Juan (FRIB/MSU); ZEGERS, Remco (Michigan State University); BECEIRO-NOVO, Saul (FRIB/MSU); GIRAUD, Simon (FRIB/MSU); GUEYE, Paul (Facility for Rare Isotope Beams); JANSSENS, Robert (UNC); SERIKOW, Zach (FRIB/MSU)

**Presenter:** BAZIN, Daniel (FRIB/MSU)

Session Classification: THU4