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Measurement of Proton-Induced Transfer Reactions with JENSA[1] SIDHARTH CHATTERJEE, Rutgers Univ, KELLY CHIPPS, STEVEN PAIN, Oak Ridge National Laboratory, JOLIE CIZEWSKI, Rutgers Univ, JENSA COLLABORATION — Reaction measurements of radioactive nuclei on light targets are important to understanding the origin of and the trends in the structure of nuclei. To efficiently measure nuclear reactions, measurements require highly localized and pure light targets and need to accommodate arrays of light charged particles, gamma rays, and recoiling heavy ions. The Jet Experiments in Nuclear Structure and Astrophysics (JENSA) jet target system was designed to facilitate high resolution, low background nuclear reaction studies. To demonstrate the capability of the JENSA system, the 20Ne(p,3He)18F reaction was studied during the commissioning phase. The radioisotope 18F is one of the galactic gamma-ray sources targeted by next-generation space-based telescopes. In addition, the 20Ne(p,3He) reaction has not been previously used for the spectroscopic study of 18F. The JENSA system gives us the opportunity to study this reaction with high resolution and low background. The measurement was performed with a proton beam from the Holifield Radioactive Ion Beam Facility tandem on a neon jet of natural isotopic abundance from JENSA. The experimental setup of JENSA and preliminary results will be discussed.

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