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Reaction Measurements with the Jet Experiments in Nuclear Structure and Astrophysics (JENSA) Gas Jet Target[1] K.A. CHIPPS, Oak Ridge National Lab, JENSA COLLABORATION — The development of radioactive ion beams for reaction measurements was a major step forward in nuclear astrophysics, reactions, and structure. However, the move to inverse kinematics presented unique difficulties, in particular with regard to the targets used in such studies. Lower beam intensities may require thicker targets, but this negatively affects the experimental resolution and potential backgrounds. A recent development toward studies of nuclear reactions is the commissioning of the Jet Experiments in Nuclear Structure and Astrophysics (JENSA) gas jet target. The JENSA system provides a pure, homogeneous, highly localized, dense, and robust gaseous target for radioactive ion beam studies. Charged-particle reactions measurements made with gas jet targets can be cleaner and display better resolution than with traditional targets. With the availability of pure and localized gas jet targets in combination with developments in exotic radioactive ion beams and next-generation detector and spectrometer systems, the range of reaction studies that are experimentally possible is vastly expanded. This talk will focus on the benefits of performing reaction measurements with a gas jet target, including discussion of several example cases using JENSA.

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