

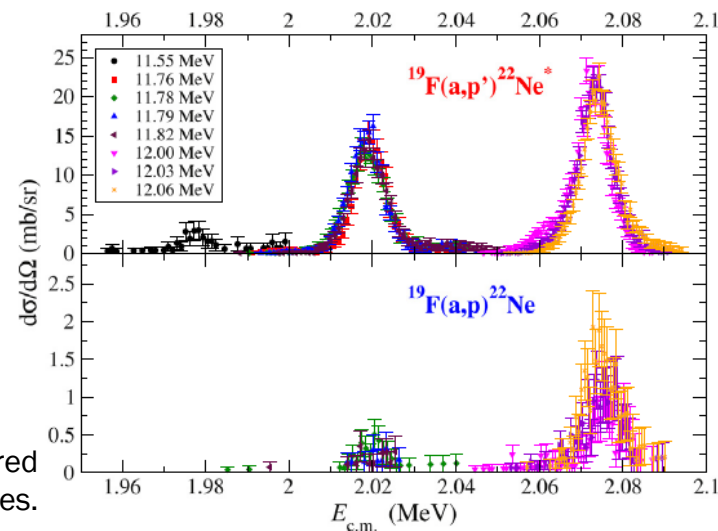
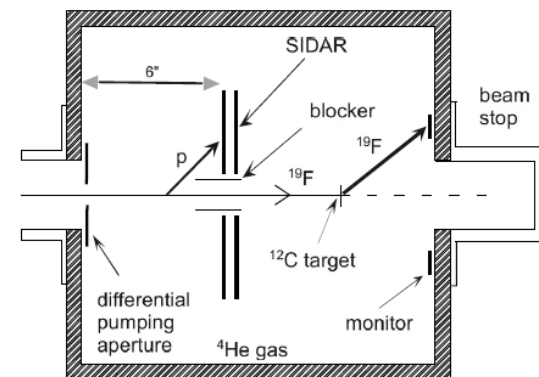
New technique to measure (α, p) reactions on exotic beams



Explosive nucleosynthesis often involves a variety of proton- and helium-induced reactions on exotic nuclei. For instance a series of (α, p) reactions characterize ignition of X-ray bursts. Measuring (α, p) cross sections on exotic beams is therefore critical for understanding such events.

A new technique has been demonstrated using an extended He gas target being bombarded with a ^{19}F beam. Since the beam loses energy in the target, the cross section is measured at many energies simultaneously.

^{19}F beams bombarded a He extended gas target. Protons from the (α, p) reaction were detected in the SIDAR Silicon Detector Array.



Cross sections were measured at a variety of beam energies.

