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GADGET: a Gaseous Detector with Germanium Tagging[1]
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Nucleosynthesis and energy generation in classical novae and type I x-ray bursts depend on the thermonuclear rates of radiative proton capture reactions. Many of these rates are dominated by contributions from narrow isolated resonances. Each resonance strength can be constructed from the proton branching ratio and lifetime. A new detection system, the Gaseous Detector with Germanium Tagging (GADGET), has been designed and constructed at the National Superconducting Cyclotron Laboratory (NSCL) to measure proton branching ratios. GADGET consists of a gaseous proportional counter to measure the spectrum of low-energy beta-delayed protons and the Segmented Germanium Array (SeGA) of high-purity germanium detectors to measure beta-delayed gamma rays. GADGET has been commissioned at NSCL using a rare-isotope beam of ^{25}Si.

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