

## Low channel density MicroMEGAS detectors for decay and reaction studies

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The explosive hydrogen burning in classical novae and x-ray bursts proceeds through radiative proton capture reactions involving proton rich nuclei close to the drip-line. Many of the reactions involved are dominated by resonant capture and the properties of the key resonances are based on limited experimental information. The properties of the key resonances need to be studied through indirect methods, such as allowed beta-decay and transfer reactions.

Over the past decade we have developed novel MicroMEGAS based detector setup, called AstroBox, for beta-delayed proton decay measurements at Texas A&M University. This detector is currently in its second generation version. Furthermore, based on the experiences from AstroBox development we have upgraded the old MDM spectrometer focal plane detector with a MicroMEGAS based energy-loss elements.

Both setups have relatively low channel density of few tens of channels and have been instrumented using standard analogue electronics. This has allowed rapid prototyping and development of the detectors themselves. However, the future improvements will likely involve digital readout to take full advantage of the possibilities of even such simple setups. In this presentation I will give an overview of the results so far and discuss the future possible directions.

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