

Abstract for an Invited Paper
for the HAW09 Meeting of
The American Physical Society

**Direct Measurements of Radiative Capture and Charged Particle Reactions of Astrophysical Importance Using
Radioactive Beams¹**
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This decade has seen the growth of facilities such as TRIUMF-ISAC, and methods enabling the direct measurement of nuclear reactions considered to have astrophysical importance using radioactive ion beams. Many challenges exist in developing the intense radioactive ISOL beams needed, and the sensitive and precise detectors required, to make these measurements, which are crucial inputs to astrophysical models of explosive scenarios such as novae and x-ray bursts enabling direct comparison with astronomical data such as those from orbiting gamma ray observatories. With emphasis on the radiative capture reaction measurements made at the DRAGON facility using radioactive beams in the last decade for classical novae, I will discuss these direct measurements and their role in certain stellar environments, as well as the technical challenges involved in these difficult experimental measurements. Where relevant I will also refer to connected auxiliary indirect measurements at TRIUMF-ISAC and other laboratories, or similar stable beam measurements. I will present the results of the first direct measurement of the $^{23}\text{Mg}(p,\gamma)^{24}\text{Al}$ reaction at DRAGON, and discuss it in its context of explosive hydrogen burning in classical novae.

¹Supported by the Natural Sciences and Engineering Research Council of Canada (NSERC).