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Exploring the αp process with transfer reactions at RCNP
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— Several experiments have been performed at RCNP that exploit the high resolution and 0° capabilities of the Grand Raiden spectrometer and the WS beamline, which can deliver a fully dispersion matched beam to target. ^{22}Mg and ^{26}Si have been studied with (p,t) and (^{4}He,^{6}He) reactions on thin ^{24}Mg and ^{28}Si foils. These transfer reactions will help us to experimentally measure the energies of potential resonance states in these nuclei above the proton and alpha thresholds. This information is vital to understanding the nucleosynthesis occurring during explosive hydrogen burning, which, for example, is thought to occur during type-I X-ray bursts. The experimental technique will be discussed, and the experimental results will be presented.

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