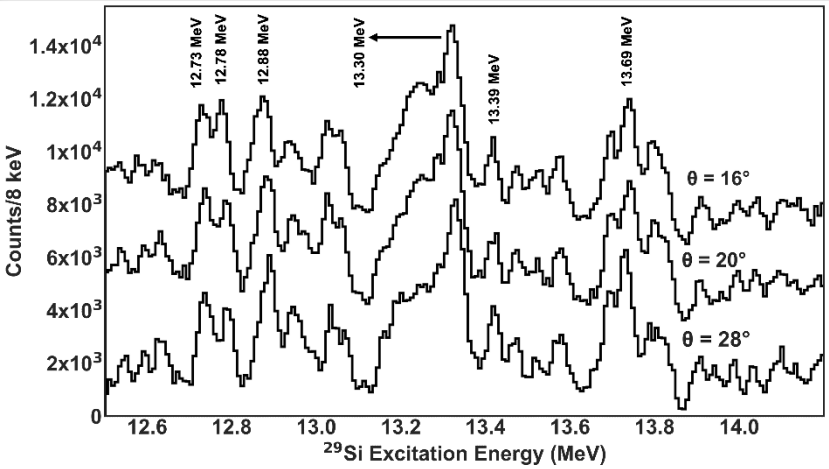
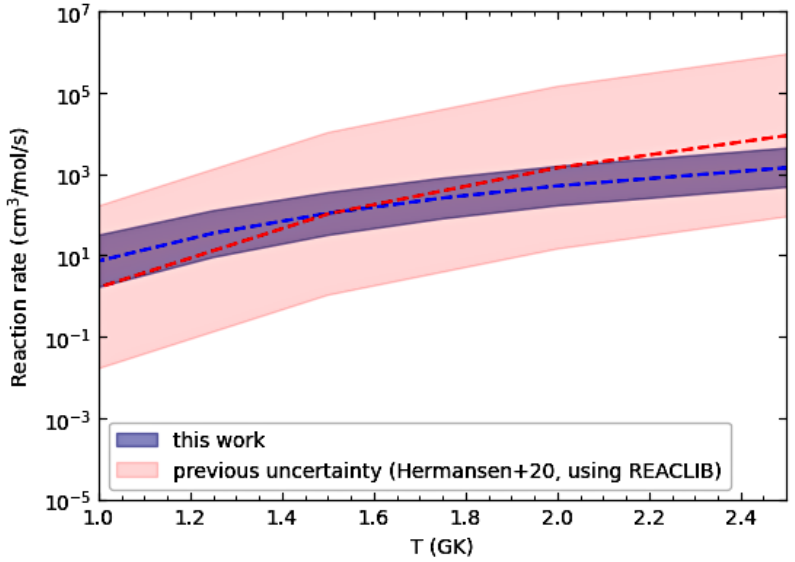
^{28}Al(p,α)^{25}Mg Reaction Constrained with Enge Spectrograph Measurement



The γ-ray emitting radioisotopes ^{43}K, ^{47}Sc, and ^{59}Fe produced in core-collapse supernovae are rather direct probes of explosion energetics. Production of these depends on the unmeasured ^{28}Al(p,α)^{25}Mg rate, which was studied with the ^{28}Si(d,p)^{29}Si reaction.

Protons from the ^{28}Si(d,p)^{29}Si reaction were analyzed with the Enge spectrograph observing 32 resonances above the threshold at 12.3 MeV.

The uncertainty in the ^{28}Al(p,α)^{25}Mg reaction rate was reduced to roughly a factor of 3 from a factor of 100.



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