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Exploring the nature and strength of the Isoscalar Giant Monopole Resonance in ^{12}C

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The excitation region centered around 10 MeV in ^{12}C is characterized by several broad overlapping states. Recent Anti-symmetrized Molecular Dynamics cluster calculations show that the Isoscalar Giant Monopole Resonance (ISGMR) may have two components and that the smaller amplitude oscillation may contribute to the strength in this region. It is proposed to measure the $^{14}\text{C}(p,t)^{12}\text{C}$ reaction at 0 degrees for comparison to the $^{12}\text{C}(\alpha,\alpha')^{12}\text{C}$ reaction at 0 degrees. The (p,t) reaction is expected to only weakly excite the ISGMR while the (α,α') reaction excites it strongly. A comparison of the two excitation modes will help to unravel where the contributions of the ISGMR are in the excitation energy spectra of ^{12}C . Some very preliminary results from the (p,t) experiments will be shown.

Apply to be considered for a student award (Yes / No)?

No

Level for award (Hons, MSc, PhD, N/A)?

N/A

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

No

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