

ISGMR measurement in Xe isotope with CAT-M

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The nuclear matter compressibility (K_τ) is an important physical quantity that can directly determine a part of the equation of state of nuclear matter. In order to determine K_τ with high accuracy, it is indispensable to determine the compressibility of many nuclei (K_A). We have been developing an active target CAT-M for the purpose of systematic measurement of an isoscalar giant monopole resonance (ISGMR).

In this study, we performed a ISGMR measurement using the ^{136}Xe (d, d') reaction as the first measurement of systematic measurements with the Xe isotope. A dipole magnet was newly introduced into CAT-M for eliminate the delta rays by high intensity heavy ion beam in the experiment. Moreover a Mini TPC that has $10\times 30\times 30\text{mm}^3$ active volume, was introduced for measure the beam angle. We will report the outline of the experiment.

Experimental nuclear physics

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Theoretical nuclear physics

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