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Cross section evaluation of the dependence of the mean field model on antisymmetrized molecular dynamics

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^{12}C-induced reactions at MeV order energy are of great importance not only in astronomical contexts but also in applications such as cancer treatment, thanks to recent advances in accelerator technology. However, there is no established standard calculation method for reactions involving heavy ions with higher mass numbers than alpha particles. Various computational codes employ a wide range of models.
Antisymmetrized molecular dynamics (AMD) is a valuable model for this study because it not only allows for fragment formation but also incorporates mean-field effects and the effects of NN collisions. In particular, AMD can effectively reproduce fragment production in collisions of stable nuclei.
In this research, we use the ^{12}C+^{27}Al and ^{12}C+^{16}O reactions as examples to assess the differences in particle production predictions among different mean-field models by comparing them with experimental data through reaction cross-sections.

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