

Effects of Level Densities and Those of a-Parameter in the Framework of Preequilibrium Model for $^{63,65}\text{Cu}(n,xp)$ Reactions in Neutrons at 9 to 15 MeV

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Abstract : In this study, the calculations of proton emission spectra produced by $^{63}\text{Cu}(n,xp)$ and $^{65}\text{Cu}(n,xp)$ reactions are used in the framework of preequilibrium models using the EMPIRE code and TALYS code. Exciton Model predictions combined with the Kalbach angular distribution systematics and the Hybrid Monte Carlo Simulation (HMS) were used. The effects of levels densities and those of a-parameter have been investigated for our calculations. The comparison with experimental data shows clear improvement over the Exciton Model and HMS calculations.

Keywords : Preequilibrium models , level density, level density a-parameter., Empire code, Talys code.

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