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Accuracy of Reaction Cross Section for Exotic Nuclei in Glauber Model Based on MCMC Diagnostics KEITI RUETER, Department of Physics and Astronomy, Western Kentucky University, IVAN NOVIKOV, Western Kentucky University — Parameters of a nuclear density distribution for an exotic nuclei with halo or skin structures can be determined from the experimentally measured reaction cross-section. In the presented work, to extract parameters such as nuclear size information for a halo and core, we compare experimental data on reaction cross-sections with values obtained using expressions of the Glauber Model. These calculations are performed using a Markov Chain Monte Carlo algorithm. We discuss the accuracy of the Monte Carlo approach and its dependence on k*, the power law turnover point in the discreet power spectrum of the random number sequence and on the lag-1 autocorrelation time of the random number sequence.

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