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Parameters of Density Distribution of Exotic Nuclei Extracted from a Data on Reaction Cross-section in the Glauber Model IVAN NOVIKOV, KEITI RUETER, Western Kentucky University — Parameters of density distribution of exotic nuclei with halo structure were extracted from the experimental data on the interaction cross-section using exact expressions obtained in the Glauber theory. Generally, to do so measured interaction cross-section is compared with a reaction cross-section calculated in optical approximation or using exact expressions of the Glauber theory. It was shown before that the parameters of nuclear density distribution depends on chosen density model (Gaussian, harmonic oscillator or Woods-Saxon) and on the used approximation of the Glauber theory (i.e. optical or rigid target). In the presented paper, we discuss the difference between reaction and interaction cross-sections calculated in various approximations, and how this difference affects the accuracy of the nuclear density parameters determination. As an example, we provide results of the analyzes of experimental data on interaction cross-section of ^{11}Li , ^{16}C and ^{31}Ne nuclei on ^{12}C target.

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