

Abstract Submitted
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Glauber Calculations of the Nuclear Excitation Cross Section of Stable Nuclei and Nuclei with Halo IVAN NOVIKOV, Western Kentucky University, YULI SHABELSKI, Petersburg Nuclear Physics Institute — Interaction cross sections for various stable and unstable isotopes were measured in scattering experiments with nuclear targets. To extract parameters of the nuclear density distribution, experimental data are compared to the reaction cross sections calculated in the Glauber theory framework. The reaction cross-sections include the cross-sections of all processes except of the elastic scattering, whereas the interaction cross-sections do not include the elastic scattering as well as the processes with a target nuclei excitation or disintegration. We calculate the difference between reaction and interaction cross sections (equals to the cross section of the nuclear target excitation) for various stable and unstable isotopes with halo using expressions obtained in the Glauber theory and in optical approximation. We show that the difference cannot be neglected. In addition, we present cross sections of nuclear excitation of projectile nuclei, which significantly differs from the cross sections of the target excitation.

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