Relativistic description of nucleon-nucleus interaction for relativistic ion beams

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Abstract

New facilities to produce intense radioactive beams are being planned of under construction all over the world. In this communication, the experiments planned at the future new GSI at Darmstadt, aiming to measure nuclear reactions in exotic beams are briefly introduced. The description of elastic nucleon scattering, charge-exchange, and (p,2p) reactions, among others, will require the extension of the formalisms employed to describe the nucleon-nucleus interaction in the initial and final state to the exotic nuclei region. We will review the relativistic impulse approximation employed in the past to describe nuclear reactions and explore its applicability to exotic nuclei.