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Nucleon resonances are known to play a significant role in nuclear systems matter and finite nuclei. Besides giving access to sub-nucleonic degrees of freedom, they are playing an indirect, but prominent role in nuclear structure physics, e.g. for nuclear binding energies through induced three-body interactions. Thereby, the virtual excitation of the Delta-resonance is the most important single contribution. In a recent experiment at the FRS@GSI the excitation of nucleon resonances was measured using secondary beams of short-lived exotic nuclei impinging on stable targets. Heavy ion charge exchange reactions were used to excite charge exchange states in the quasi-elastic and the resonance regions. Both (p,n) and (n,p)-type reactions were observed. The data clearly resolve the spectral distributions of nuclear and nucleon charge exchange excitations, considerably better than the previous pioneering experiments e.g. at DIOGENE@SATURNE. In both charge exchange channels the Delta resonance is clearly visible, well separated from the quasi-elastic spectral component. Indications for the excitation of higher resonances are seen. The data show that the FRS@GSI is an ideal, if not unique instrument to investigate the excitation mechanisms and production probability of nucleon resonances in cold nuclear matter at normal density and variable charge asymmetry. Even better conditions will be encountered in the future at the Super-FRS once the FAIR facility comes in operation. With the then available equipment investigations of the mesonic decay of resonances in either the target or the projectile nucleus will be possible, thus allowing to studying very explicitly self-energy effects of resonances in exotic matter. The excitation of nucleonic resonances in charge exchange reactions is described RPA theory. Corresponding response functions are obtained both for the projectile and target nuclei. Medium effects on the Delta and Roper excitations are taken into account by means of their corresponding self-energies. Response functions are calculated by state-of-the-art nuclear structure input. The reaction process by itself is described within a formalism using the same basic tensoral structures as familiar from leptonic processes as charge exchange neutrino scattering. A covariant formulation is used taking care of neutral and charge current processes. Initial and final state interactions between the reacting ions are taken into account in impulse approximation with NN T-matrix interactions and eikonal theory. Cross sections are calculated in a distorted wave eikonal approximation. The excitation of the Delta and the Roper resonance, both in the projectile and target nuclei are considered.

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