

NUCLEON CHARGE-EXCHANGE
REACTIONS AT INTERMEDIATE ENERGIES
IN THE ONE-MESON EXCHANGE PICTURE

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S u m m a r y

A method to describe the observables in the nucleon charge-exchange reactions on nuclei at intermediate energies with the explicit inclusion of the pion and rho-meson exchange and an excitation of the intermediate $\Delta(1232)$ isobar is proposed. The $A(p,n)B$ reaction may be imagined as $A(p,n)A+\pi$ reaction with the pion four-momentum equal to $(m_\pi, 0)$. This allows one to use the findings of the pion production/absorption theory in a combination with a standard distorted wave formalism for the description of the reaction observables. The corrections on the nuclear medium and short-range correlations are included. The calculations are compared with the experimental cross section of the ${}^7\text{Li}(p, n){}^7\text{Be}$ reaction at $T_p = 200$ MeV and a satisfactory agreement is obtained.