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Quasi-free nucleon knockout contribution in 40Ca(p,p') inclusive scattering at 200 MeV

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Abstract content
   (Max 300 words)

The Distorted Wave Impulse Approximation (DWIA) has been used to measure the extent of contributions due to quasi-free proton and neutron knockout in inclusive inelastic proton-scattering reactions from 40Ca(p,2p)39K and 40Ca(p,pn)39Ca. Such reactions contribute to the underlying background in the continuum of the Isoscalar Giant Quadrupole Resonance (ISGQR) region. In the DWIA, the three-body cross-section for a reaction is considered with final relative nucleon-nucleon energy prescription (FEP) in the evaluation of cross sections. Three distorted waves are generated using different optical potentials for different channels involved. The two-body cross-section is then evaluated using on-shell amplitude interpolated from phase shifts for projectile-ejectile scattering. Quantitative description of proton and neutron contributions and the influence on the ISGQR will be discussed.

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