

Abstract Submitted
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Delta-Isobar Production in the Hard Photodisintegration of a Deuteron¹ CARLOS GRANADOS, MISAK SARGSIAN, Florida International University — Hard photodisintegration of the deuteron in delta-isobar production channels is proposed as a useful process in identifying the quark structure of hadrons and of hadronic interactions at large momentum and energy transfer. The reactions are modeled using the hard re scattering model, HRM, following previous works on hard breakup of a nucleon nucleon (NN) system in light nuclei. Here, quantitative predictions through the HRM require the numerical input of fits of experimental NN hard elastic scattering cross sections. Because of the lack of data in hard NN scattering into Δ -isobar channels, the cross section of the corresponding photodisintegration processes cannot be predicted in the same way. Instead, the corresponding NN scattering process is modeled through the quark interchange mechanism, QIM, leaving an unknown normalization parameter. The observables of interest are ratios of differential cross sections of Δ -isobar production channels to NN breakup in deuteron photodisintegration. Both entries in these ratios are derived through the HRM and QIM so that normalization parameters cancel out and numerical predictions can be obtained.

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