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Spin density matrix elements in polarized photoproduction of resonances

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I report the results of the Regge model study of the spin density matrix elements (SDMEs) of the $\Delta(1232)$ in the photoproduction reaction $\vec{\gamma}p \rightarrow X^- \Delta^{++}$ where $X \in (\pi, b_1)$. These reactions are being studied by GlueX in its ongoing efforts to understand the spectrum the light hybrid mesons. The intensity profile of the photoproduction of resonance(s) from a polarized photon is governed by the SDMEs of the resonance(s) produced. While the line shapes provide information about the decay of the unstable states, the SDMEs tell us about their production mechanism. I present the results of the ongoing efforts at the JPAC to model the photoproduction of mesonic resonances along with the Δ , the insights derived from the properties of the SDMEs, and briefly discuss their implications for higher spin states.

session

B. Hadron Spectroscopy

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