

Amplitude analysis of resonant production in three pions

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Collaboration

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Abstract content

We present some results on the analysis of three pion resonances. The analyses are motivated by the recent release of the largest data set on diffractively produced three pions by the COMPASS collaboration. We construct reaction amplitudes that satisfy fundamental S -matrix principles, which allows the use of models that have physical constraints to be used in fitting data. The models are motivated by the isobar model that satisfy unitarity constraints. The model consist of a Deck production amplitude with which final state interactions are constrained by unitarity. We employ the isobar model where two of the pions form a quasi-stable particle. The analysis is performed in the high-energy, single Regge limit. We specifically discuss the examples of the three pion $J^{PC} = 2^{-+}$ resonance in the $\rho\pi$ and $f_2\pi$ channels.

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