

## Probing $\eta\pi$ Production with Finite-Energy Sum Rules

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The study of hadronic scattering processes remains fundamental for understanding the dynamics of strong interactions across energy scales. Finite-Energy Sum Rules (FESR) provide a powerful framework for connecting low-energy resonance behavior with the high-energy regime described by Regge theory, offering valuable constraints on phenomenological amplitudes. Motivated by the COMPASS measurements of ( $\eta\pi$ ) production, the reaction ( $\pi p \rightarrow \pi\eta p$ ) is examined within this framework. This channel is particularly well suited for probing the transition between resonance-dominated and Regge-dominated dynamics, and for exploring possible contributions from exotic mesons. The analysis sheds light on the consistency of amplitude descriptions across energies and enhances our understanding of the mechanisms governing ( $\eta\pi$ ) production.

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