

Abstract Submitted
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Phase Structure of the T-matrix and Multichannel Unitary Isobar Model¹ S. RAZAVI, K. NAKAYAMA, University of Georgia — By exploiting the full phase structure of the meson-baryon coupled channels reaction amplitude—here including also the photon-baryon channel—an isobar model is constructed which fulfills automatically the unitarity and analyticity conditions of the S-matrix, in addition to gauge invariance in the case of photoproduction. In particular, it is shown that the unitarity of the (resonance) pole amplitude arises from the dressing mechanism inherent in the basic T-matrix equation, requiring no extra unitarity condition on the pole amplitude as is the case in earlier works on isobar models. As an example, the present model is applied in the description of the meson-nucleon reactions including the πN , ηN , σN , ρN and $\pi\Delta$ channels. The latter three account effectively for the $\pi\pi N$ channel.

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Shahab Razavi
University of Georgia

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