Nuclear Theory

Comparing partial-wave amplitude parametrization with dynamical models of meson-nucleon scattering

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Relationships between partial-wave amplitude parametrizations, in particular the Chew-Mandelstam approach, and dynamical coupled-channel models are established and investigated. A bare pole corresponding to the Delta(1232) resonance, found in a recent dynamical-model fit to pion- and omega-meson production reactions, compares closely to one found in a unitary multichannel partial-wave amplitude parametrization of SAID. The model dependence of the bare pole precludes a direct connection between the approaches but is suggestive that the dynamical description and the phenomenological parametrization are closely related.

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