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Asymptotical contributions to pion electromagnetic and transition form factor PENG GUO, Physics Department, Indiana University, Bloomington, MIKHAIL GORCHTEIN, Center for the Exploration of Energy and Matter, Indiana University, Bloomington, ADAM SZCZEPANIAK, Physics Department and Center for the Exploration of Energy and Matter, Indiana University, Bloomington
— We present a calculation of the pion electromagnetic and transition from factors in the framework of dispersion relations. At low energies (time-like virtual photon masses), the input in the dispersion relation is obtained by solving the coupled channel problem for the $\pi\pi$ and $K\bar{K}$ scattering in a fully unitarized K-matrix approach. At high energies, we propose a model that features novel colored Regge exchange contributions. The parameters of these Regge exchanges can be related to the high energy behavior of meson-meson scattering amplitudes. The recent data on the transition $\gamma^* \to \pi^0\gamma$ form factor by BaBar collaboration can be explained in our model with no further adjustments.

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