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Inclusion of Toller-Angle Dependence in the Multi-Regge Integral Equation

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where

$$W_{\alpha\beta} = (\partial_\alpha V_\beta - \partial_\beta V_\alpha). \quad (3.13)$$

It can easily be shown that P_τ is conserved and, as we have shown in Ref. 1, P_0 is positive definite. Expressed in this form, P_τ is manifestly invariant under the gauge transformation

$$V_\rho \rightarrow V_\rho + \partial_\rho \Lambda. \quad (3.14)$$

IV. CONCLUSION

The stimulus for starting this investigation was a paper by Kyriakopoulos⁵ in which a similar model was considered but in which the antisymmetry had to be imposed separately. This led to several difficulties in

applying the general methods that we have used. In addition our approach has led to a completely gauge-invariant formulation in the free-field case and also in the interaction case if we impose the conditions (1.11) on the source functions. These conditions limit the possible terms in the interaction Lagrangian. For example, a term $g\bar{B}\sigma_{\mu\nu}\psi_{\mu\nu}B$ is not possible for the interaction of a baryon and meson field. We have shown that the terms that are permitted in the interaction Lagrangian lead to effective interaction Hamiltonians for S -matrix calculations that are just equal to $-\mathcal{E}_{\text{int}}$, thus obeying Matthew's rule.

It is also interesting to note that for S -matrix terms containing only internal meson lines the $m \rightarrow 0$ limit exists.

Erratum

Inclusion of Toller-Angle Dependence in the Multi-Regge Integral Equation, DENNIS SILVERMAN AND CHUNG-I TAN [Phys. Rev. D **1**, 3479 (1970)]. Equations (6) and (8) should contain factors like $[f(t_\pm', \omega_\pm', t_\pm'')/\mu^2]^{\alpha(t_\pm')}$. The denominator μ^2 was missing in the published text.

We would like to stress that the derivation of our integral equation, Eq. (9), involves only *dynamical* assumptions, i.e., the parametrization of production

amplitudes. No kinematic approximations to the phase space have been made. Equation (20) then follows as a consequence of multiperipheralism. These results do not correspond to the *weak coupling* limit, contrary to claims made recently in literature.

We would also like to point out that we have been informed recently of the work by E. Byckling and K. Kajantie, Phys. Rev. **187**, 2008 (1969), which covered related topics, but with different emphasis.