

## The octet of pseudoscalar mesons in term of $SU(N)$ Gauge Invariant Lagrangian

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By breaking the initial  $SU(N)$  symmetry, we derive the Lagrangian[1] governing the dynamics of the massive scalar particles, which can be treated as the octet of the pseudoscalar mesons. The contribution of both the quark-gluon interaction and self-interaction gluon field into the masses of the octet particles is considered. Provided that the hadronization of the confinement matter into the pion triplet only occurs, the QCD coupling constant is evaluated in this case in the developed model.

1.A.V.Koshelkin, Phys.Rev.D, v.92 , 045017 (2015)

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