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## Renormalization of two-dimensional XQCD

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Recently, Kaplan proposed an interesting extension of QCD : XQCD (=extended QCD) with bosonic auxiliary fields. While its partition function is kept exactly the same as that of QCD, XQCD naturally contains properties of low-energy hadrons.

We apply this extension to the two-dimensional QCD in the large  $N_c$  limit ('t Hooft model). In this solvable model, it is possible to directly examine the hadronic picture of the 2d XQCD and analyze its renormalization group flow to understand how the auxiliary degrees of freedom behave in the low energy region. We confirm that the additional scalar fields can become dynamical acquiring the kinetic term, and its parity-odd part becomes dominant in the low energy region.

This renormalization of XQCD provides an “extension” of the renormalization scheme of QCD, inserting different field variables from those in the original theory, without any changes in physical observables.

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