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Induced Yang-Mills-Non-Abelian-Chern-Simons action in three dimensions

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Abstract

In this paper, we consider the analysis of the one-loop effective action for the gluons coupled to the quarks in $(1+2)$ -dimensional spacetime. By integrating out the quark fields, we compute the one-loop Feynman graphs of the one, two, three and four-point functions for the gluon. It is explicitly shown that the resulting effective action leads to the non-Abelian Chern-Simons and pure Yang-Mills action at the low-energy limit.

Keywords: effective action, Yang-Mills action, Non-Abelian Chern-Simons action, gluon's n-point functions

For full article, refer to the Persian section