Parametrization of Fully Dressed Quark Propagator

MA Wei-Xing,[1,2,3] ZHU Ji-Zhen,[1] ZHOU Li-Juan,[1] SHEN Peng-Nian,[2,3] and HU Zhao-Hui[1]

[1] Department of Information and Computing Science, Guangxi University of Technology, Liuzhou 545006, China
[2] Institute of High Energy Physics, the Chinese Academy of Sciences, Beijing 100039, China
[3] Institute for Theoretical Physics, the Chinese Academy of Sciences, Beijing 100080, China

Abstract: Based on an extensive study of the Dyson-Schwinger equations for a fully dressed quark propagator in the "rainbow" approximation, a parametrized form of the quark propagator is suggested. The corresponding quark self-energy Σ_f and the structure of non-local quark vacuum condensate $<0|:\bar{q}(x)q(0):|0>$ are investigated. The algebraic form of the quark propagator proposed in this work describes a confining quark propagation, and is quite convenient to be used in any numerical calculations.

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