

Abstract Submitted
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The 't Hooft Model interpolating between the Instant Form Dynamics and the Light-Front Dynamics¹ BAILING MA, CHUENG-RYONG JI, North Carolina State University — The 1 + 1 dimensional Quantum Chromodynamics with the large N_c limit, known as the 't Hooft model, plays an important theoretical role for the study of strong interactions exhibiting confinement and mass gap. The 't Hooft model was originally formulated and solved utilizing the boost invariance of the Light-Front Dynamics (LFD). Since then, it was formulated also in the Instant Form Dynamics (IFD) and solved in specific reference frames such as the target rest frame and the infinite momentum frame. In this work, we reformulate it in the quantization form interpolating between the LFD and the IFD. Introducing an interpolation angle parameter, δ , we connect and combine the familiarity of the ordinary time evolution in the IFD with the distinguished features including the vacuum structure in the LFD. The mass spectra of the mesons turn out to be independent of the δ value as expected. Meson wavefunctions and parton distribution functions (PDFs) are analyzed with the interpolation angle parameter δ in this generalized quantization form. The effects of boosting frames are studied in different forms of dynamics and the quasi-PDFs in IFD are contrasted with the PDFs in LFD.

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