Mass Gap Equation in 1+1 Dimensional QCD Interpolating between the Instant and Front Forms of Relativistic Dynamics[1] BAILING MA, CHUENG-RYONG JI, North Carolina State University — Due to the simplicity and the inherent characteristics of confinement, the 1+1 dimensional QCD known as 't Hooft model has attracted a lot of interest for many yers. In the large N_c limit, the contribution from non-planar diagrams are negligible, hence an iterative equation can be simplified and solved numerically for the quark propagator dressed by gluons. While 't Hooft model was originally solved using the Light Front Dynamics (LFD), people have also done similar work afterwards in the Instant Form Dynamics (IFD). We attempt to interpolate the 1+1 dimensional QCD between IFD and LFD by introducing an angle called the interpolation angle. Using this interpolation method, we analyze the formulation of the single quark mass gap equation in dynamical forms between IFD and LFD. Examining that our interpolating results reproduce the IFD and LFD results previously obtained by others, we discuss the fate of the vacuum condensation, the chiral angle, and the effective mass in the limit to the IFD and the LFD.

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