Abstract Submitted
for the TSF21 Meeting of
The American Physical Society

Lattice Quantum Chromo Dynamics - From Gauge Generation to Correlation Function Construction MATTHEW TEEL, SAMINA MASOOD, University of Houston - Clear Lake — We go from the perturbative regime involving the path integral approach of Quantum Chromo Dynamics (QCD), to the non-perturbative regime in an attempt to extract more detail in the low momentum transfer domain where the path integral formalism breaks down. We will discuss overarching strategies that can be described as carrying out QCD calculations by representing possible positions and interactions of quarks and gluons as points on an imaginary 4D space-time lattice. We begin with gauge generation to set up for propagator computation, to then conclude with correlation function construction, which generally uses the outputs of the propagator stage to generate correlation functions that then become subject to statistical analysis.

Matthew Teel
University of Houston - Clear Lake

Date submitted: 24 Sep 2021 Electronic form version 1.4