

eBRST SU(2) Gauge Theory on Lattice

Tuesday, 24 July 2018 15:20 (20 minutes)

Equivariant BRST (eBRST) SU(2) gauge theory involves gauge fixing in the SU(2)/U(1) coset space leaving the subgroup U(1) gauge invariant. This can be taken as an alternative formulation of SU(2) lattice gauge theory that uses gauge-fixing, evading the no-go theorem by Neuberger preventing the use of standard BRST. Results will be presented for our numerical simulation of the eBRST gauge theory, generalised with addition of a mass term (for both the ghost fields and the gauge fields in the coset space) that keeps the eBRST symmetry intact. The theory in the reduced limit has also a global SU(2) symmetry which has been speculated in the literature to undergo a spontaneous breaking to U(1). Our results on this possible spontaneous symmetry breaking and its implication for possible continuum limit will be presented.

Primary author: Mr SARKAR, Mugdha (Saha Institute of Nuclear Physics)

Co-author: Prof. DE, Asit Kumar (Professor)

Presenter: Mr SARKAR, Mugdha (Saha Institute of Nuclear Physics)

Session Classification: Physics beyond the Standard Model

Track Classification: Physics Beyond the Standard Model