

Contribution ID: 487

Type: Oral presentation

Numerical simulation of self-dual U(1) lattice field theory with electric and magnetic matter

Wednesday 28 July 2021 14:45 (15 minutes)

We study a recently proposed formulation of U(1) lattice field theory with electric and magnetic matter based on the Villain formulation. This discretization allows for a duality that gives rise to relations between weak and strong coupling. We use a worldline version of the model to overcome the complex action problem and discuss suitable algorithms for its simulation. We investigate the self-dual point and study the possibility of a spontaneous breaking of self duality.

Primary authors: ANOSOVA, Maria (University of Graz); GATTRINGER, Christof (University of Graz); SULE-JMANPASIC, Tin (Durham University); IQBAL, Nabil (Durham University)

Presenter: ANOSOVA, Maria (University of Graz)

Session Classification: Theoretical developments and applications beyond particle physics

Track Classification: Theoretical developments and applications beyond particle physics