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Conserving Lattice Gauge Theory for Finite Systems

Wednesday 28 July 2021 06:00 (15 minutes)

In this talk I present a recent proposal for a novel action for lattice gauge theory for finite systems, which accommodates non-periodic boundary conditions [1]. Drawing on the summation-by-parts formulation of finite differences and finite volume strategies of computational electrodynamics, an action is constructed that implements the proper integral form of Gauss' law and exhibits an inherently symmetric energy momentum tensor, all while realizing automatic O(a) improvement. Its central ingredients are illustrated using Abelian gauge theory as example.

[1] A.R. arXiv:2102.08616

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