



Contribution ID: 272

Type: **Talk**

Generalizing the $SU(3)$ loop-string-hadron formalism to multidimensional space

Friday 7 November 2025 14:50 (20 minutes)

The loop-string-hadron (LSH) formulation for lattice gauge theories has been developed in the Hamiltonian framework for application in quantum simulation and tensor-network calculations. A major driver of its development has been eventual application to QCD. The LSH formalism for $SU(2)$ gauge fields was quickly developed for coupling to staggered quarks, in 1D space, and in multidimensional space. Generalizing the formalism to $SU(3)$ was straightforward for 1D space, but the generalization to multidimensional space has proven to be the most technically involved step. I will report on the status of this generalization, especially our recent usage of a basis that is nonorthogonal.

Parallel Session (for talks only)

Theoretical developments and applications beyond Standard Model

Authors: STRYKER, Jesse (Lawrence Berkeley National Laboratory); Dr KADAM, Saurabh V. (University of Washington, Seattle); NASKAR, Aahiri (BITS Pilani Goa K K Birla Campus); RAYCHOWDHURY, Indrakshi (Department of Physics, BITS Pilani, KK Birla Goa Campus)

Presenter: STRYKER, Jesse (Lawrence Berkeley National Laboratory)

Session Classification: Theoretical developments and applications beyond Standard Model