Contribution ID: **20** Type: **not specified**

Gauge equivariant neural networks for quantum lattice gauge theories

Thursday 30 September 2021 16:40 (30 minutes)

I will discuss our recent advancement on neural network quantum states with gauge theories for quantum lattice models. I will first introduce the gauge equivariant neural-network quantum states for quantum lattice gauge theories with Zd gauge group and non-abelian Kitaev D(G) models. In particular, the neural network representation is combined with variational quantum Monte Carlo to demonstrate the confining/deconfining phase transition in Z2 lattice gauge theory. After that I will present another gauge invariant autoregressive neural network approach for ground state and real time simulations in a variety of quantum lattice models.

Presenter: LUO, Di (University of illinois, Urbana-Champaign)

Session Classification: Session 8