Machine-Learning-Based Sampling in Lattice Field Theory and Quantum Chemistry



Contribution ID: 19 Type: not specified

Continuous normalizing flows for lattice gauge theories

Thursday, 24 October 2024 11:10 (40 minutes)

Continuous normalizing flows are known to be highly expressive and flexible, which allows for the easier incorporation of large symmetries and makes them a powerful tool for sampling in lattice field theories. Building on previous work, I will present a general continuous normalizing flow architecture for matrix Lie groups that are equivariant under group transformations. By applying it to lattice gauge theories in two dimensions as proof-of-principle experiments, I will show that it achieves competitive performance, making it plausibly a promising component in the toolbox for future lattice sampling tasks.

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