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A scalable flow-based approach to mitigate topological freezing

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In recent years, flow-based samplers have emerged as a promising alternative to traditional sampling methods in lattice gauge theory. In this talk, we will introduce a class of flow-based samplers known as Stochastic Normalizing Flows (SNFs), which combine neural networks with non-equilibrium Monte Carlo algorithms. We will show that SNFs exhibit excellent scaling with the volume in lattice $SU(3)$ gauge theory. Then, we will present an application to $SU(3)$ gauge theory with open boundary conditions, demonstrating how this approach represents an efficient strategy for the sampling of topological observables at fine lattice spacings.

Special requests

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