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Machine Learning Trivializing Flows

Thursday, 3 August 2023 13:30 (20 minutes)

The so-called trivializing flows were proposed to speed up Hybrid Monte Carlo
simulations, where the Wilson flow was used as an approximation of a
trivializing map, a transformation of the gauge fields which trivializes the
theory. It was shown that the scaling of the computational costs towards the
continuum did not change with respect to HMC. The introduction of machine
learning tecniques, especially normalizing flows, for the sampling of lattice
gauge theories has shed some hope on solving topology freezing in lattice QCD
simulations. In this talk I will present our work using normalizing flows as
trivializing flows, given its similarity with the idea of a trivializing map,
and study its benefits with respect to standard HMC.

Topical area

Algorithms and Artificial Intelligence

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