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Gauge-equivariant neural networks as preconditioners in lattice QCD

Wednesday, 15 February 2023 10:45 (45 minutes)

We demonstrate that a state-of-the art multi-grid preconditioner can be learned efficiently by gauge-equivariant neural networks. We show that the models require minimal re-training on different gauge configurations of the same gauge ensemble and to a large extent remain efficient under modest modifications of ensemble parameters. We also demonstrate that important paradigms such as communication avoidance are straightforward to implement in this framework.

Recording and publishing

no

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