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Nonperturbative matching of Hamiltonian and Lagrangian Simulations

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When comparing the Lagrangian and Hamiltonian formulations of lattice gauge theories, a matching procedure is required to match the parameters and observables between these two formulations. For this, we take the continuum limit in time direction on the Lagrangian side, while keeping the spatial lattice spacing fixed. We study several observables for this nonperturbative matching and compare different ways to take the temporal continuum limit. We apply our approach to the pure U(1) lattice gauge theory in 2+1 dimensions.

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