LATTICE 21

JULY 26-30 2021, ZOOM/GATHER@MIT

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E10: Machine learning approaches to the QCD transition

Wednesday, 28 July 2021 15:45 (15 minutes)

We study the high temperature transition in pure $SU(3)$ gauge theory and in full QCD with 3D-convolutional neural networks trained as parts of either unsupervised or semi-supervised learning problems. Pure gauge configurations are obtained with the MILC public code and full QCD are from simulations of $N_f = 2 + 1 + 1$ Wilson fermions at maximal twist. We discuss the capability of different approaches to identify different phases using as input the configurations of Polyakov loops. To better expose fluctuations, a standardized version of Polyakov loops is also considered.

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