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Restoration of chiral symmetry in cold and dense Nambu — Jona-Lasinio model with tensor renormalization group

Wednesday, December 16, 2020 4:00 PM (20 minutes)

We analyze the chiral phase transition of the Nambu — Jona-Lasinio model in the cold and dense region on the lattice developing the Grassmann version of the anisotropic tensor renormalization group algorithm. The model is formulated with the Kogut — Susskind fermion action. We use the chiral condensate as an order parameter to investigate the restoration of the chiral symmetry. The first-order chiral phase transition is clearly observed in the dense region at vanishing temperature with $\mu/T \sim O(10^3)$ on a large volume of $V = 1024^4$. We also present the results for the equation of state.

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Session Classification: Short talks