

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

*Wednesday, 16 December 2020 16:00 (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.

**Presenter:** Mr AKIYAMA, Shinichiro (U. of Tsukuba)

**Session Classification:** Short talks