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Nonperturbative QCD within the functional renormalization group

Tuesday 24 September 2024 12:10 (40 minutes)

In this talk, I would like to discuss recent progress in studies of nonperturbative QCD within the functional renormalization group (fRG) approach, focusing mainly on three aspects: QCD in vacuum and hadron structure, QCD at finite temperature and densities, and real-time dynamics of QCD. This concerns in more detail on the construction of fRG approach to first-principles QCD within the four-quark scatterings, and its application to the calculation of quasi-parton distribution amplitudes (PDA) for pions, QCD phase diagram and location of the critical end point (CEP), ripples of CEP, soft modes and the size of the static and dynamic critical region, the QCD moat regime, relaxation dynamics in QCD, etc.

Presenter: FU, Wei-jie (Dalian University of Technology)