

768th ASRC Seminar

Date: 令和元年11月29日(金)

13:30 ~

Location: 先端基礎研究交流棟 2階ロビー

Speaker: 末永大輝氏 (華中師範大学)

Title: 高密度QCDに関する最近のトピックス
「Recent topics related to dense QCD」

要旨:

In this talk, I introduce our recent two studies related to Quantum Chromodynamics (QCD) at high density. Then this talk is divided into two sectors. First, I explain the massive Landau gauge approach to dense QCD. Recent studies on Infrared (IR) sector of QCD show that the massive extension of pure Yang-Mills theory (the massive Landau gauge theory) can fit the lattice result surprisingly within the Landau gauge. Then we apply the theory to finite density by including quarks, and discuss impacts of our results. Next, I discuss the appearance of the QCD Kondo excitons. When a heavy quark is put inside the light quark matter as an impurity, it is proposed that the characteristic ground state so-called the QCD Kondo ground state can be realized, which is analogous to the Kondo effect in the context of condensed matter physics. Then we study the appearance of bound states of a heavy quark and a light quark (QCD excitons) on the QCD Kondo ground state.

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