Contribution ID: **55**   Type: **Talk**

Higher order net baryon number cumulants in the strong coupling lattice QCD

Saturday, 18 July 2015 09:20 (20 minutes)

In the Beam Energy Scan Phase-1 (BES-1), net proton number fluctuations
have been measured in search for the QCD critical point [1].
Finding the critical point is one of the most challenging subjects
also in lattice QCD due to the sign problem. In the strong coupling limit
of QCD, one can investigate the finite density region by employing the
Auxiliary Field Monte-Carlo (AFMC) method [2] or monomer-dimer-polymer
simulation [3] in which the sign problem becomes milder.
We will report results on the baryon number fluctuations in the chiral limit with AFMC and discuss the
influence of the mesonic fluctuations on the critical behavior of the cumulants.

[1] L. Adamczyk, et al., [STAR Collaboration], Phys. Rev. Lett. 112 (2014)
032302.
[2] T. Ichihara, A. Ohnishi, and T. Z. Nakano, PTEP 2014 (2014) 12, 123D02.
[3] W. Unger and P. de Forcrand, J.Phys. G38 (2011) 124190.

Primary author: Mr ICHIHARA, Terukazu (Kyoto University)

Co-authors: Prof. OHNISHI, Akira (Yukawa Institute for Theoretical Physics(YITP)); Dr MORITA, Kenji (Yukawa Institute for Theoretical Physics)

Presenter: Mr ICHIHARA, Terukazu (Kyoto University)

Session Classification: Nonzero Temperature and Density

Track Classification: Nonzero Temperature and Density