



Contribution ID: 87

Type: **Contributed talk**

Lattice QCD for Baryon Rich Matter – Beyond Taylor Expansions

Wednesday 30 September 2015 09:00 (20 minutes)

Lattice QCD is believed to have limited power for baryon rich QCD matter because of the notorious sign problem. There have been several approaches to circumvent the problem, such as the multi-parameter reweighting method and the pure imaginary chemical potential approach, which can not provide us information beyond $\mu/T = 1$ where μ is the quark baryon chemical potential and T is temperature.

Here we report our recent studies, the canonical approach and the pinning one. We first review the previous methods, and study why we cannot go into large μ/T regions. Then we present our results which catch the hadron/QGP transition line, although our lattice is still small and the quark mass is heavy.

On behalf of collaboration:

[Other]

Primary author: NAKAMURA, Atsushi (RCNP, Osaka Univ)

Co-authors: Dr SUZUKI, Asobu (Tsukuba univ.); Dr TAKAHASHI, Junichi (Kyushu univ.); Dr FUKUDA, Ryutaro (Univ. Tokyo/ETH); Dr OKA, Shotaro (Rikkyo univ.); Dr SAKAI, Shuntaro (Kyoto univ.); Prof. TANIGUCHI, Yusuke (Tsukuba univ.)

Presenter: NAKAMURA, Atsushi (RCNP, Osaka Univ)

Session Classification: Quark Matter in Astrophysics

Track Classification: Quark Matter in Astrophysics