Contribution ID: **291** Type: **Talk**

New results for QCD at non-vanishing chemical potentials from Taylor expansion

Monday, 25 July 2016 15:55 (20 minutes)

We present recent results for QCD at non-vanishing chemical potentials for baryon number, electric charge and strangeness.
The results are obtained from Taylor expanding the QCD partition function up to sixth order in these potentials.
The numerical simulations for two light and one strange quark have been carried out on the basis of the Highly Improved Staggered Quark (HISQ) discretization scheme at lattice spacings which in the vicinity of the chiral transition temperature correspond to temporal extents of Nt = 6, 8 and 12, and at mass values which correspond to a physical Kaon mass and pion Goldstone masses around the physical value of 140 MeV.
The results on, for instance, the equation of state are obtained as function of the three different chemical potentials and can thus also easily be adjusted to experimental conditions met in heavy ion colliders.

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Session Classification: Nonzero Temperature and Density

Track Classification: Nonzero Temperature and Density