Lattice 2024



Contribution ID: 313 Type: Talk

## On analytic continuation from imaginary to real chemical potential in Lattice QCD

Friday, 2 August 2024 12:55 (20 minutes)

Imaginary baryon number chemical potential simulations are a popular workaround for the (in)famous sign problem plaguing finite density QCD studies on the lattice. One is necessarily left with the problem of analytically continuing results to real values of  $\mu_B$ . In the framework of the Bielefeld Parma Collaboration, we have in recent years studied a multi-point Padé description of the net baryon number density computed as a function of imaginary baryon number chemical potential. While our main emphasis has till now been on the determination of Lee-Yang singularities, the method is per se a natural tool to analytically continue results. We report on the status of our projects with this respect, comparing the Padé approach to analytic continuation to other possible strategies.

Primary authors: DI RENZO, Francesco (University of Parma & DI RENZO

Parma and INFN - Istituto Nazionale di Fisica Nucleare)

Presenter: DI RENZO, Francesco (University of Parma & DI RENZO, DI RENZO)

Session Classification: QCD at non-zero density

Track Classification: QCD at Non-zero Density