



Contribution ID: 19

Type: **Talk**

Electric conductivity in gauge theory with finite-density dynamical fermions

Tuesday 8 September 2020 10:00 (30 minutes)

We study the dependence of electric conductivity on fermion chemical potential in finite-density $SU(2)$ gauge theory with $N_f = 2$ flavours of rooted staggered sea quarks and with Wilson-Dirac and Domain Wall valence quarks. We concentrate in particular on the vicinity of the crossover between the high-temperature and the low-temperature regimes, where we find the low-frequency electric conductivity to be most sensitive to small changes in fermion density. An estimate of the second derivative $\frac{T^2}{\sigma} \frac{\partial^2 \sigma}{\partial \mu^2} \sim 0.05$ is obtained. On the other hand, in the diquark condensation phase at low temperatures and large values of μ the conductivity quickly grows with chemical potential. As a by-product of our study we confirm the conclusions of previous studies with higher pion masses that for $SU(2)$ gauge theory the ratio of crossover temperature to pion mass T_c/m_π is significantly smaller than in real QCD.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

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