Contribution ID: **1120** Type: **Oral**

Thermal phase transition in rotating QCD with Nf = 2 clover-improved Wilson fermions

Tuesday, 25 October 2022 14:30 (15 minutes)

The relativistic rotation causes a change in QCD critical temperature. Various phenomenological and effective models predict a decrease in the critical temperature in rotating QCD. Nevertheless, it follows from lattice simulations that the critical temperature in gluodynamics increases due to rotation. But in QCD the rotation acts on both gluons and fermions, and combination of these effects may lead to unexpected results. In this report the first lattice results for a rotating QCD with dynamical Nf=2 clover-improved Wilson quarks will be presented. It is shown that the rotation of gluons and fermions has an opposite effect on the critical temperature. Dependence of the results on the pion mass is also discussed.

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Session Classification: Theoretical Physics

Track Classification: Theoretical Physics