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## The $\theta$ -angle physics of 2-color QCD at finite density

*Thursday 5 September 2024 16:00 (35 minutes)*

Understanding the QCD phase diagram is a major challenge in high-energy physics.

To this end, two-color QCD offers an ideal theoretical laboratory since, unlike real-world QCD, its dynamics at finite density can be investigated via lattice simulations.

In this talk, I will use chiral perturbation theory to discuss the infrared dynamics of two-color QCD at finite density by focusing on the impact of the  $\theta$ -angle on the vacuum properties, symmetries, and spectrum.

In particular, I will describe the rich phase diagram of the theory for different numbers of flavors. I will put special emphasis on the diquark condensation phenomenon and the fate of CP symmetry at  $\theta=\pi$ .

Finally, I will briefly comment on the significance of the results for QCD at finite quark chemical potential.

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