

Chiral Symmetry and Large Magnetic Fields

Saturday 20 July 2024 15:15 (15 minutes)

Chiral symmetry constrains QCD properties in large magnetic fields $eB \sim m_\pi^2$, thereby providing stringent model-independent tests for lattice QCD and hadronic models. As examples of magnetic-field dependent observables calculated with chiral perturbation theory, we exhibit the finite-volume dependence of the pressure anisotropy and magnetization, as well as detail how finite-volume effects can be exploited for lattice correlation functions of neutral particles in magnetic fields. Due to the potential relevance for magnetars, weak decays are also investigated. Chiral symmetry leads to next-to-leading order predictions for decay rates without any undetermined parameters.

Alternate track

1. Heavy Ions

I read the instructions above

Yes

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Session Classification: Strong interactions and Hadron Physics

Track Classification: 06. Strong Interactions and Hadron Physics