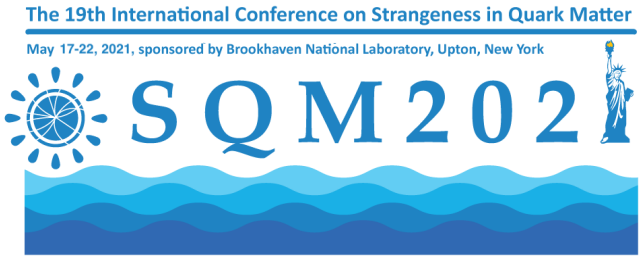

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Heavy-quark effects on cold quark matter and self-bound stars

Friday 21 May 2021 10:10 (20 minutes)

The heavy-quark effects on the equation of state for cold and dense quark matter are obtained from perturbative QCD, yielding observables parametrized only by the renormalization scale. In particular, we investigate the thermodynamics of charm quark matter under the constraints of β equilibrium and electric charge neutrality in a region of densities where perturbative QCD is, in principle, much more reliable. Finally, we analyze the stability of charm stars, which might be realized as a new branch of ultradense hybrid compact stars, and find that such self-bound stars are unstable under radial oscillations.

Collaboration

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