Contribution ID: **334** Type: **Poster**

Improvements to the T=0 QCD equation of state and rotating neutron star phenomenology

I will discuss recent progress in the determination of the quark matter equation of state (EoS) and its applications to the phenomenology of neutron stars (NSs). The current state-of-the-art matched QCD EoS comes from the work of Kurkela el al. (2014), in which the authors matched chiral effective theory (cEFT) at low densities to pQCD at high densities. Since then, the $T = 0$, massless-quark, pQCD EoS has been improved beyond $\mathcal{O}(g^4)$. I will discuss these improvements, as well as improvements to the phenomenology of NSs. In particular, I will detail NS phenomenology taking rotation into account, something that was not done in the original work of Kurkela et al. 2014).

Preferred Track

Baryon-Rich QCD Matter and Astrophysics

Collaboration

Not applicable

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