Contribution ID: **56**   Type: **Poster**

Estimates on the convergence of expansions at finite baryon chemical potentials

Convergence of three different expansion schemes at finite baryon chemical potentials, including the conventional Taylor expansion, the Pad\'e approximants, and the T' expansion proposed recently in lattice QCD simulations, have been investigated in a low energy effective theory within the fRG approach. It is found that the convergence of the T' expansion and the Pad\'e approximants is consistent with the conventional Taylor expansion, within the expansion orders considered in this work. Furthermore, we find that the consistent regions of the three different expansions are in agreement with the convergence radius of the Lee-Yang edge singularities.

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