

In medium properties and effects of vector mesons from effective field theories: recent advances

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We investigate (axial)vector meson mass modifications and their effects on the chiral phase transition and various thermodynamical quantities within the framework of an (axial)vector meson extended Polyakov quark meson model. The model is parameterized at zero temperature and density by comparing calculated masses and decay widths with their experimental values taken from the PDG. Meson curvature masses are calculated with the inclusion of one-loop constituent quark loops into the meson self-energies. We calculate the chiral phase boundary and the critical endpoint (CEP). We also investigate the baryon number fluctuations and related quantities such as kurtosis and other susceptibility ratios and compare with existing lattice results. Moreover, vector condensates and their effects on compact star properties are also considered. If time permits I would like to show some large N_c results as well.

Collaboration

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