

Meson effects on the QCD phase transition at physical and unphysical quark masses

Saturday, 24 June 2023 10:00 (30 minutes)

We summarise recent theoretical results on the QCD phase diagram and the properties of hadrons at finite temperature and chemical potential based on a combination of lattice QCD and Dyson-Schwinger equations. We discuss the silver blaze property of mesons with different quantum numbers along the zero-T-finite- μ -axis and assess the influence of meson and baryon fluctuations on the location of the critical end point. We furthermore investigate the influence of mesonic long range fluctuations on the order of the phase transition in the limit of vanishing up/down quark masses, varying the strange quark mass from zero to infinity. We find a second order phase transition for the whole left hand boundary of the Columbia plot in contrast to expectations based on the Pisarski/Wilczek.

Collaboration

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