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Type: Non spécifié

Cold quark matter: Renormalization group improvement

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We will discuss the recent developments in renormalization group improvements of the cold and dense QCD pressure (Phys. Rev. D 111, 034020 and Phys. Rev. Lett. 129, 212001) at next-to-next-to leading order (NNLO) through the renormalization group optimized perturbation theory (RGOPT) and at all-order resummation of the soft modes. RGOPT applied for the very first time at NNLO displayed a significant reduction in sensitivity to variations of the arbitrary renormalization scale as compared to the state-of-the-art NNLO results. This confirms previous NLO investigations that the RGOPT resummation scheme provides improved convergence properties and reduced renormalization scale uncertainties, thus being a promising prescription to improve perturbative QCD at high and mid range baryonic densities.

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Classification de Session: QCD