

A three-loop HTLpt-improved calculation of QCD thermodynamics

Friday 20 August 2010 10:30 (1 hour)

I will discuss a recently completed calculation of the NNLO calculation of the HTL-reorganized thermodynamics for QCD. I will review the basic idea of reorganization of finite temperature perturbation theory and motivate why this hard work is necessary. The final result will be a comparison of the NNLO calculation for the pressure, energy density, and entropy. I will show that the HTL-reorganized calculation agrees quite well with available lattice data down to temperatures on the order of 2 to 3 times the critical temperature. Finally, I will present an outlook for the application of the method to real time quantities such as transport coefficients, heavy quark drag/diffusion, etc.

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