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Scale invariant resummed perturbation at finite temperature

Wednesday 10 May 2017 19:00 (30 minutes)

We will illustrate how our recently developed
nonperturbative variational technique combined with renormalization group (RG) properties efficiently resums perturbative expansions in thermal field theories. The resulting convergence and scale dependence of optimized thermodynamical quantities are drastically improved as compared to standard perturbative expansions, as well as to other related methods such as the screened perturbation or (resummed) hard-thermal-loop perturbation. Our general method will be illustrated for the nonlinear sigma model, as a toy model for thermal QCD, and we will also discuss some preliminary results in the framework of hard thermal loop resummation for QCD thermodynamical quantities.

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Session Classification: Wednesday Afternoon (20min talks + 10min discussions)