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QCD thermodynamics. Hard-thermal-loop perturbation theory vs lattice

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The perturbative series for finite-temperature field theories has very poor convergence properties and one needs a way to reorganize it. In this talk, I review one way of reorganizing the perturbative series thermal QCD, namely hard-thermal-loop perturbation theory (HTLpt). I will present results for the pressure, trace anomaly, speed of sound and the quark susceptibilities from a 3-loop HTLpt calculation. A careful comparison with available lattice data shows good agreement for a number of physical quantities.

Summary

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